QUICKSTUDY
Secure Sockets Layer guards sensitive information while it's transmitted over the Web. Page 69

LONG ROAD TO EAI
Everyone talks about enterprise application integration. Bechtel's Kevin Cornish tells what it's really like. Page 56

NATIONAL SECURITY
One in 10 of the Defense Department's suppliers faces year 2000 problems. Page 39

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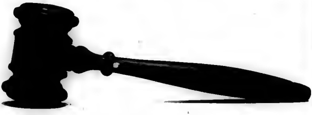

COURTROOM 'GOTCHAS'

Ready to defend your year 2000 project in court, with every detail under the microscope? Sloppy records, a limited budget, spotty testing, a late start, undocumented decisions and e-mail from loose-cannon employees can all doom your case, reports Kathleen Melymuka, who provides a sneak preview of the withering cross-examination you can expect after the new year.

Report starts on page 44.

DECUS USER GROUP FACES FORCED UNION

Compaq behind push; membership roiling over impeachment of board member who talked

BY JAIKUMAR VIJAYAN

The Digital Equipment Computer User Society, one of the industry's oldest, largest and most powerful user groups, is teetering on the edge of extinction.

Under pressure from Compaq Computer Corp., the 38-year-old group — which represents more than 10,000 users of Digital Equipment Corp. equipment — may soon merge with the International Tandem Users' Group, an association for users of Tandem Computer Systems Inc. systems. Both companies are now owned by Compaq.

News of the proposed merger hit DECUS members in a rather unexpected fashion last week. Though DECUS and ITUG officers have talked about merging, no one knew it was imminent. That changed when news of the plan being considered by a joint task force was leaked by DECUS board member Jeff Killeen.

The DECUS board immediately voted to impeach Killeen for leaking "confidential" in-

DECUS, page 16

ENTERPRISE VENDORS RETOOL AS WEB GUIDES

Suppliers following client rush online

BY JAIKUMAR VIJAYAN

Old-line enterprise vendors are working overtime to morph into full-scale providers of Internet technologies and integration capabilities.

Industry heavyweights and trendsetters such as IBM, Hewlett-Packard Co., Sun Microsystems Inc. and Compaq Computer Corp. are trying to recast themselves as providers of not just hardware, software and middleware, but also the integration services needed to implement e-commerce applications.

CELESTIAL SEASONINGS' Steve McKown: Services aren't vendors' niche

Enterprise Vendors, page 24

ONLINE EARNINGS? NOT TO WORRY!

Race to Web unabated by missing ROI data

BY JULIA KING

Judging from last week's giant tumble in Internet stocks, Wall Street's love affair with anything "dot-com" may finally be on the wane.

E-COMMERCE

But not in corporate boardrooms. Many senior executives at large companies remain unwaveringly ardent about e-commerce and other pricey Internet projects whose estimated return on investment often isn't even calculated up front. At least not in traditional terms.

This despite the fact that the cost of building and launching increasingly sophisticated Web-based e-commerce sites is expected to increase 25% annually from the current average of $1 million, according to research firm Gartner Group Inc. in Stamford, Conn. "Executives are absolutely charging ahead because they're feeling competitive pressure," said Maura

Online Earnings, page 89

AFTER-HOURS TRADING DILEMMA

Processing crunch, staffing issues dog IT

BY THOMAS HOFFMAN

As it becomes more likely that the New York Stock Exchange and the Nasdaq Stock Market Inc. will add after-hours trading as early as this summer, brokerage CIOs are facing tough decisions.

Evening trading sessions mean brokerages will have less time to process and clear those trades through their batch processing systems. And to support the extra trading sessions, brokerages will have to identify and entice the right mix of information technology support and operations people to work nights.

The board of governors for the National Association of Securities Dealers Inc., the Washington-based organization that runs Nasdaq, voted last week to approve an evening trading proposal. Pending approval by the Securities and Exchange Commission, Nasdaq would add a second trading session for its top 100 stocks from 5:30 p.m. EST to either 9 or 10 p.m.

Trading Hours, page 89

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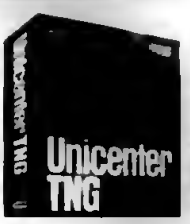

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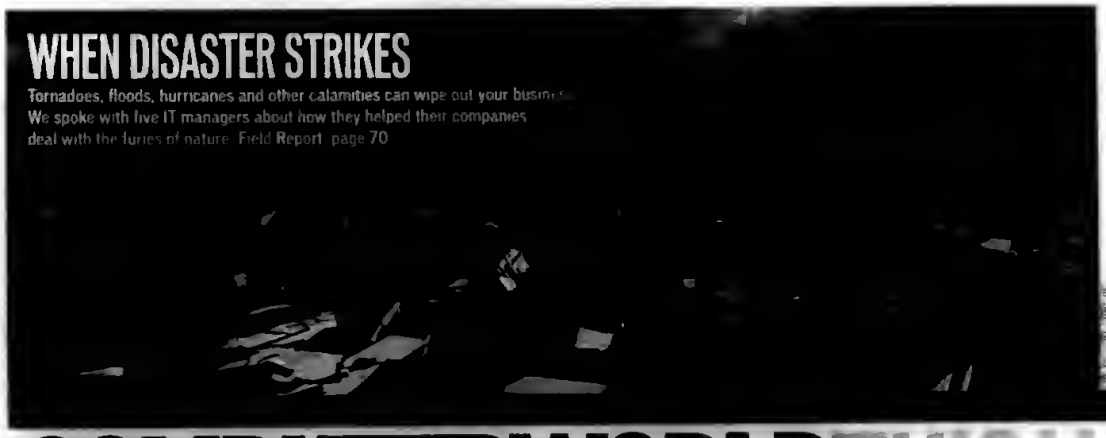

WHEN DISASTER STRIKES

Tornadoes, floods, hurricanes and other calamities can wipe out your busin
We spoke with five IT managers about how they helped their companies
deal with the furies of nature. Field Report, page 70

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PEOPLE HAVE UMBILICAL CORDS FROM THEIR BRAINS TO THEIR BILLFOLDS.

ROBERT ZAWACRI, UNIVERSITY OF COLORADO, ON WHY EXTRA PAY MIGHT BE THE KEY TO GETTING WALL STREET TECHS TO WORR A GRAVEYARO SHIFT IN ORDER TO EXTEND TRADE TIMES

SEE PAGE 1

AT DEADLINE

Attacks at Senate, FBI Web Sites

The official U.S. Senate Web site was down Friday. It was possibly the latest government target by crackers, following an attack on the FBI Web site Wednesday. The founder of AntiOnline LLP, an Internet forum for hackers and systems administrators, said the attacks were launched after the FBI rounded up alleged crackers for questioning. No arrests were made.

Fidelity Expands Trading Methods

Fidelity Investments last week unveiled aggressive plans to allow trading via phone, PC and handheld device. The services encompass a Web site that will open in late June and a wireless system for trading remotely, Fidelity said.

Security Rules Pass

In the wake of security breaches at the Department of Energy (DOE) National Laboratories [CW, May 24], the House Science Committee adopted two amendments addressing lab security. One prohibits access by citizens of "sensitive" countries to any classified DOE facility. The other applies penalties of up to $100,000 for each security breach.

U.K. Firm To Buy ERP Vendor for $60M

Marcam Solutions Inc., a Newton, Mass., maker of enterprise resource planning software for process manufacturers, has signed a deal to be acquired by U.K.-based Invensys PLC for $60 million. Marcam lost $20.6 million on revenue of $55.2 million in the first half of its current fiscal year.

E-Commerce Site Costs $1M

The average cost of launching an enterprise Web e-commerce site is $1 million, Gartner Group Inc. said. An estimated 78% of the total development cost is labor-related, the market research firm said.

CA MUST SELL PLATINUM MAINFRAME PRODUCTS

Justice Department order relieves users

BY JAIKUMAR VIJAYAN AND SAMI LAIS

PLATINUM Technology International Inc. users expect to benefit from the Department of Justice decision requiring Computer Associates International Inc. to sell six of Platinum's mainframe management products before it acquires the company.

Platinum Technology software that might have otherwise withered under CA because of product overlap would have a stronger chance of thriving under a new owner, users and analysts said.

"Most of the Platinum products [being divested] are competitive to what CA has," said Barry White, manager of information systems at Hewitt Associates Inc., a benefits outsourcer in Lincolnshire, Ill.

But if the eventual buyer of the divested software isn't a strong entity, users could still end up facing diluted support and services, said Mike Kahn, an analyst at The Clipper Group in Wellesley, Mass.

The technologies include mainframe tape management, job scheduling and reruns, change management for OS/390 and automated operations for IBM's VSE operating system. A trustee will sell the products to a buyer — approved by the Justice Department — that can effectively compete in those markets. CA's purchase of Platinum has come under close scrutiny by users anxious about the company's commitment to acquired products that compete with its own [CW, March 29].

So far though, CA's purchase of Platinum isn't stopping Stride Rite Inc. from rolling out Platinum's ProVision enterprise management suite across six of its servers, said Ray LeFebvre, lead Oracle database administrator in Lexington, Mass. "I'm not too worried because it will take them at least a year to absorb one into the other," he said.

JUST THE FACTS

Gotta Go

Platinum Technology products CA has to sell:

- **AutoSys/Zeke:** For MVS and VSE mainframe operating systems
- **AutoRerun:** For MVS
- **Automedia:** For MVS
- **CCC/Lifecycle Manager:** For MVS and OS/390
- **AutoAction:** For VSE

Report Says U.S. Has Backdoor to Notes

European body levels charge, warns users

BY ANN HARRISON

A new European Parliament report charges that U.S. spies can access data on Lotus Notes that users think is protected by encryption, a potentially perilous situation for global firms that exchange competitive information internationally.

The report, commissioned by the European Parliament's Science and Technology Options Assessment Panel, charges that the U.S. National Security Agency can access data from export versions of Notes software. Cambridge, Mass.-based Lotus Development Corp., which developed the program, said it voluntarily weakened Notes encryption to meet export restrictions.

Any European or multinational company encrypting sensitive intellectual property would be at risk, said Dan Blum, an analyst at The Burton Group in Salt Lake City. "You think you're secure, but the databases of Notes are often replicated on laptops of mobile users where the encrypted data would be vulnerable to [laptop] theft," Blum said.

Lotus has kept its European customers informed about its encryption methods and has received no complaints, said Kevin Lynch, a product manager at Lotus. "We were not collaborating with the U.S. government to weaken the integrity of our customers' data," Lynch said. He added that Microsoft Corp. and Netscape Communications Corp. have also weakened encryption in export versions of browsers to meet export requirements.

The European Parliament requested the report in response to concerns that U.S. intelligence agencies were spying on European companies. The report states that Notes uses a strategy that exposes 24 of the 64 bits of an encryption key used to secure Web sessions and e-mail, making it easier to decode communications.

Lynch confirmed that 24 bits of the 64-bit key in the Notes 4.0 export version are encrypted in a public key supplied by the U.S. government that is buried in the user's Notes software. The U.S. government holds the private key to encrypt the data, but it must physically seize the computer to access the key.

Contractor or Employee? Bill Would Make It Easier to Tell

BY GARB COLE-GOMOLSKI

Companies that rely heavily on information technology consultants said they support legislation designed to distinguish between employees and independent contractors.

The bill could help companies avoid the kind of costly legal battles Microsoft Corp. has been fighting with a group of long-term contractors.

Sponsored by Reps. Jerry Kleczka (D-Wis.) and Amo Houghton (R-N.Y.), the bill classifies service providers as employees unless they exercise control over their own work, stay free to handle other clients and assume some entrepreneurial risk.

The current guidelines — a set of more than 20 criteria such as who trains workers and gives them instructions — would no longer be used.

"I've never found the IRS rules to be clear," said Dennis Harrish, director of compensation at The Mead Corp. in Dayton, Ohio.

Adin Goldberg, a partner at New York law firm Whitman Breed Abbott & Morgan LLP, said he expects "the business community to favor legislation that will create certainty on this issue."

Right now, with so many factors being looked at and no one factor having more weight, "companies are vulnerable to workers coming along and claiming that they are actually employees," Goldberg said.

Recent high-profile cases involving misclassification of workers have brought the issue to the forefront, said Goldberg, who pointed out that similar legislation introduced in recent years has fizzled.

Although the bill was generally well-received, some observers doubted it would ease the task of classifying workers. "They are trying to simplify this, but they are not clarifying it," said Keriann Vogel, a vice president at Darwin Partners, a research firm in Herndon, Va.

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ADP ON TRACK TO KEEP AMERICA PAID

Payroll processor for 35 million passes Y2K test with 25 clients

BY THOMAS HOFFMAN

AUTOMATIC Data Processing Inc., which processes paychecks for 35 million Americans and 350,000 companies, last week announced successful completion of year 2000 tests with 25 of its biggest customers.

With the exception of two minor glitches — including a small processing problem with one customer's enterprise resource planning system — the results of the tests bode well for U.S. workers who are concerned about receiving their paychecks on time early next year.

"We were told up front [by senior management] that failure was not an option," said James Kinder, head of ADP's year 2000 program office.

Payroll processing isn't the top priority for most corporate year 2000 programs, but "it is a big focus," said Stephanie Moore, an analyst at Giga Information Group Inc. in Cambridge, Mass. Moore said many of Giga's clients are moving their final 1999 payroll runs to Dec. 21 to ensure employees are paid by the end of the year.

The other problem that popped up during ADP's test wasn't really a Y2K glitch at all. Because next year's tax rates won't be published until August, ADP was originally unable to display some tax rates for its customers. To fix the problem, ADP hard-coded the current tax rate into its general ledger system in order to crunch the tax information.

ADP Year 2000 Date Testing

The four dates ADP and 25 customers tested for payroll processing:

DATE	REASON
Dec. 31, 1999	The last day of the year
Jan. 10, 2000	First date requiring a 7-digit date field
Feb. 29, 2000	Leap year day
Oct. 10, 2000	First date requiring an 8-digit date field

SOURCE: ADP AUTOMATIC DATA PROCESSING INC., ROSELAND, N.J.

Sweet Success

ADP executives and customers credited several success factors. For starters, ADP required that its customers participating in the test — such as The Chase Manhattan Bank and Goldman, Sachs & Co. — have their own payroll staffers run the tests because they know their company's payroll systems best, said John Gregory, director of ADP's AutoPay division.

Plus ADP had more than 20 banks review what the tests consisted of beforehand to make sure no stone was left unturned.

"I didn't find any errors at all for Y2K," said Gerri Powers, a business analyst and test participant who works in the payroll department at Agway Inc. in Syracuse, N.Y. Agway tested direct deposit and four different payroll cycles with ADP — including Dec. 31, 1999, Feb. 29, 2000 (leap day) and Oct. 10, 2000 — the first date that will require an eight-digit date field.

Clients paid $10,000 each to participate in the tests, but other customers will be able to download the test scripts from ADP's Web site (*www.adp.com*) for $50 beginning this week. That will let them test their own front-end systems, but not run processing tests with ADP, Gregory said.

Sun-Netscape Alliance Outlines App Server Plans

Analysts see merged products as tricky

BY CAROL SLIWA

The Sun-Netscape Alliance last week outlined its application server road map, pledging that customers who wrote applications to either of the companies' older products will be able to run them with the new merged product due next year.

That promise should help address customer concerns about having to rewrite or redesign significant portions of Web-based applications written to work with either Netscape Communications Corp.'s or Sun Microsystems Inc.'s NetDynamics application server software [CW, April 12].

But some analysts continue to harbor varying degrees of skepticism about the alliance's ability to deliver.

"It's just the old cynic in me ... that tells me it's going to turn out harder than they expect," said Mike Gilpin, an analyst at Cambridge, Mass.-based Giga Information Group Inc.

Ann Thomas, an analyst at Boston-based Patricia Seybold Group, said the product merger plan is feasible. But she said she's concerned about "this nebulous alliance controlled by two different corporations — one a hardware company and the other an Internet service provider." America Online Inc. completed it merger with Netscape in March.

The Sun-Netscape Alliance revised original plans, which were announced March 30, that called for a merged product in the first quarter of 2000. The road map unveiled last week calls for the following:

- Early summer releases of the existing products, NetDynamics 5.01 and Netscape Application Server 4.0. Both will support the Java 2 Enterprise Edition programming model, including Enterprise JavaBeans, Java servlets and Java Server Pages.
- In the first half of next year, release of an application server that will support the NetDynamics and Netscape application programming interfaces and the Java 2 Enterprise Edition.
- In the second half of next year, release of a more integrated alliance application server that has less distinction between the NetDynamics and Netscape application server runtime engines.

"One of our design goals is ensuring backward compatibility, while at the same time making sure we continue to improve the performance and high availability," said Yuan Huntington, group product marketing manager for the Sun-Netscape Alliance.

Carmakers Resist Selling Direct Over the Internet

Channel conflicts loom as crucial question

BY BOB WALLACE
NASHVILLE

A Dell Computer Corp. executive last week urged auto industry leaders to adopt Dell's wildly successful method of selling direct to consumers via the Internet. But automakers at a conference here said they can't yet imagine scrapping a business model that dates back to Henry Ford's Model T.

While Dell's approach builds sales, shortens delivery times and cuts costs, critical benefits automakers cherish, it presents them with daunting business and technology challenges. That's because the industry has an entrenched business model of mass-producing cars on assembly lines and selling them through sprawling networks of dealers whose franchises are protected by state laws. So far, automakers' Web use has been limited to allowing car shopping, not buying.

"The question for automakers is, how far do you want to go with the Net?" said Joe Bione, director of automotive industry consulting at Deloitte Consulting in Detroit. "Do you want to go all the way to electronic commerce or stop short? It's basically a price issue. The Dell approach cuts a lot of cost from the process."

One automaker is committed to selling through its normal channel but isn't ruling out the Dell approach, either.

"We have a strong commitment to sell through our 1,300-plus dealer base," said Cesár Penaherrera, vice president of purchasing and logistics at Honda of America Manufacturing Inc. in Marysville, Ohio. But the company has created a study group to examine selling direct, he added, because "the Internet has tremendous potential for enhancing our relationship with our customers."

Saturn Corp., which was founded with a mission of providing a superior shopping, buying and owning experience, counts on dealership visits and sales for its success.

"Selling direct would transform our entire operations," said Cynthia Trudell, Saturn's chairman and president. "Retailers are an integral part of the system, and we need to provide 'high-touch' [customer relations], as it is an important element of our brands."

Some industry executives can't fathom the notion of buying a vehicle online without ever visiting a dealership.

"We're talking about what's usually the next biggest purchase you make to your house, so I'd want to check out the car in person and speak to people who can discuss its characteristics," said Richard Gilligan, executive vice president and chief operating officer at Mitsubishi Motor Manufacturing of America Inc. in Normal, Ill. But consumers will continue to use the Internet for research so that they're well-armed when they visit dealers, he said.

You can't run an e-business using client/server technology.

"SAP IS THE LEADING GLOBAL PROVIDER OF CLIENT/SERVER BUSINESS APPLICATION SOLUTIONS." —*Source: SAP Web Site*

"PeopleSoft's strategy includes a dedicated focus on client/server applications..."
—*Source: PeopleSoft Web Site*

"BAAN IS A LEADING PROVIDER OF ENTERPRISE BUSINESS MANAGEMENT SOFTWARE FOR AN OPEN SYSTEMS, CLIENT/SERVER COMPUTING ENVIRONMENT." —*Source: Baan SEC Filing 5/4/98*

"The Siebel Enterprise Applications are comprised of a broad renge of advanced client/server application products..."
—*Source: Siebel SEC Filing 11/13/98*

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BRIEFS

Pirated Apps on Rise

An estimated 231 million business software applications installed last year were pirated, 2.5 million more than in 1997, according to the Business Software Alliance and the Software and Information Industry Association. The number of pirated applications was down as a percentage of all installed software, from 49% in 1994 to 38% in 1998.

Y2K Report Pushes Bank Stocks Down

Shares of Citigroup, J. P. Morgan & Co. and other big banks tumbled last week after a bank analyst at Credit Suisse First Boston Corp. warned that year 2000 problems at the banks' international counterparts could shrink earnings. The analyst, Michael Mayo, said he was concerned only about the Y2K readiness of the banks' international divisions and partners.

Grocer Scraps Data Card for Customers

California supermarket chain Nob Hill Foods Inc. last week told its 400,000 customers who hold discount cards that the cards would be discontinued. A Nob Hill spokesman said customers without cards were calling for equal savings.

Lender Launches E-Biz Loan Program

First American Lending Corp. in Santa Ana, Calif., this week will announce a financing program for companies to fund e-commerce projects. Companies can borrow $25,000 to develop a site and up to $25,000 more for equipment.

Short Takes

The number of people who visited financial Web sites at work increased 37% between December and March, to about 8.1 million, according to MEDIA METRIX INC. . . . MICROSOFT CORP. made Service Pack 3 for Visual Studio 6.0 available at *http://msdn.microsoft.com/vstudio/sp/*.

IBM EXEC: MICROSOFT TACTICS CUTTHROAT

Testimony expected to boost government's case

BY PATRICK THIBODEAU
RALEIGH, N.C.

FROM IBM executive Garry Norris' perspective, PC and software makers work as both competitors and partners. But Microsoft Corp. takes a particularly cutthroat approach, he said.

As long as IBM made competing software products, Microsoft made it clear to IBM that "it will suffer in price, terms and conditions" in its Windows licensing deals.

That's what Norris, who negotiated those deals for IBM PC Co. from 1995 to 1997, will say when he takes the witness stand for the government when the Microsoft antitrust trial resumes this week.

Norris was deposed last week by a Microsoft attorney in preparation for the trial. His testimony will be used to boost what legal experts say is the strongest part of the government's antitrust case: Microsoft's power over PC makers.

Microsoft will counter Norris' testimony by arguing that any testy relations during that period stemmed from an audit of IBM's Windows licenses. Microsoft said it wasn't getting all the royalties it deserved, and the audit proved the company right. IBM paid $30 million to settle.

IBM'S GARRY NORRIS: Microsoft made it clear that IBM would "suffer" in its Windows licensing deals as long as it made competing software products

Norris, testifying in a federal courtroom here last week, said PC makers such as Compaq Computer Corp. and Hewlett-Packard Co. wanted to license IBM's OS/2 operating system, "but once Microsoft discovered they were in negotiations with IBM, threats were made to them."

When Microsoft officials pitched a joint agreement with IBM on Windows, it would have meant the end of OS/2, and IBM refused, Norris said.

IBM subsequently saw its Windows licensing cost rise from $9 per copy of Windows 3.x to about $46 for Windows 95, or from $40 million to $220 million annually, he said.

Microsoft and the government say they're still open to a settlement, but the company may be waiting until after the rebuttal phase to assess its chances of a court victory.

"Microsoft probably has nothing to lose by waiting for rebuttal unless they plan to put their foot in their mouth big-time," said Yee Wah Chin, an attorney at Squadron, Ellenoff, Plesent & Sheinfeld LLP in New York.

Group Says "Structural" Remedy Needed

Contrary to what Microsoft says, the merger of America Online Inc. and Netscape Communications Corp. doesn't negate the federal antitrust case against it, said former federal Judge Robert Bork last week.

That's because the deal "doesn't remotely begin to affect the operating system monopoly Microsoft has," Bork said during a conference call held by The Project to Promote Competition and Innovation in the Digital Age, or Pro-Comp, an anti-Microsoft lobbying group in Washington.

Bork called for a "structural" remedy for Microsoft. That is, the court should rearrange the company, possibly even break it up, Bork said. "Microsoft has shown enormous agility in getting around the law," he said, referring to a consent decree Microsoft signed in 1994.

Microsoft maintains that government intervention in the computer industry could adversely affect the U.S. economy and that companies have a right to design their own products. – *Kim S. Nash*

New L. L. Bean Stores May Hike IT Costs 40%

In-store operations will need additions

BY STACY COLLETT

Now that L. L. Bean Inc. has decided to paddle against the current of e-commerce by opening brick-and-mortar stores, the company faces another challenge — revamping its IT infrastructure.

L. L. Bean last week said it will open a 75,000-sq.-ft. store in northern Virginia in July 2000, complete with a trout stream and rock-climbing wall. It plans as many as five more stores by 2002.

According to industry observers, the outdoor apparel giant, which does 90% of its business by catalog, must add a merchandise management system, point-of-sale equipment and a data warehousing system. The price tag could raise the Freeport, Maine, retailer's information technology spending by 40%.

"Nonstore retailers' IT expenditures are very similar to [those of] wholesalers. They haven't been spending money on in-store operations. That's one of the core competencies of a successful retailer," said Ed Jimenez, an analyst at Dataquest Worldwide Services Inc. in Mountain View, Calif.

Companies that have retail locations typically spend 1% of their total revenue on IT. Catalog and online retailers spend about 0.6%, according to Dataquest.

L. L. Bean had $1.07 billion in revenue last year.

A merchandise management system, which can cost anywhere from $50,000 to $1 million, depending on the number of stores, will be a critical purchase, analysts said.

L. L. Bean's IT Shopping List

COMPONENT	COST
Merchandise management system	$50,000 to $1 million
Data warehousing system	$50,000 to $200,000
Cash registers and servers	$23,000 per store

SOURCE: ESTIMATES FROM DATAQUEST, SAN JOSE

Although L. L. Bean has 80 factory outlet stores nationwide, "they're typically used as a dumping ground for merchandise that's discontinued or didn't sell well," said Kenneth Gassman, an analyst at Davenport & Co. in Richmond, Va. A merchandise management system will help L. L. Bean decide what inventory a store needs and select products for specific stores based on criteria such as local preferences and climate.

Data warehousing systems, which range from $50,000 to $200,000, will be essential for sending inventory information back to corporate headquarters. Managing those systems at each store will require more staffing. But many retailers are outsourcing those services to companies like NCR Corp. and IBM, Jimenez said.

Company officials were unavailable to comment on specific IT plans.

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Apparel Makers Anxiously Await SAP Fixes

BY CRAIG STEDMAN

Early users of SAP AG's version of R/3 for apparel and footwear companies last week said they're encouraged by progress being made to fix problems that have made it hard to go live with the application.

But the race is still on to zap bugs and improve the software's performance in time to meet rollout deadlines at users such as Reebok International Ltd. and VF Corp.

For example, Reebok is waiting for SAP to deliver on development changes that are supposed to speed up R/3's ability to check product inventories and stocks of raw materials when retailers and distributors are placing orders.

The changes are needed by the end of June so Reebok can expand an installation of the SAP software to its North American operations in time for year 2000, said Peter Burrows, chief technology officer at the Stoughton, Mass., sneaker maker.

REEBOK'S Peter Burrows: Not out of the woods yet

"We're not out of the woods, but SAP is responding," Burrows said. "It's not something we're taking lightly, and neither are they." He added that there have been "considerable" improvements since Reebok told SAP in April it had to step up efforts to fix the software.

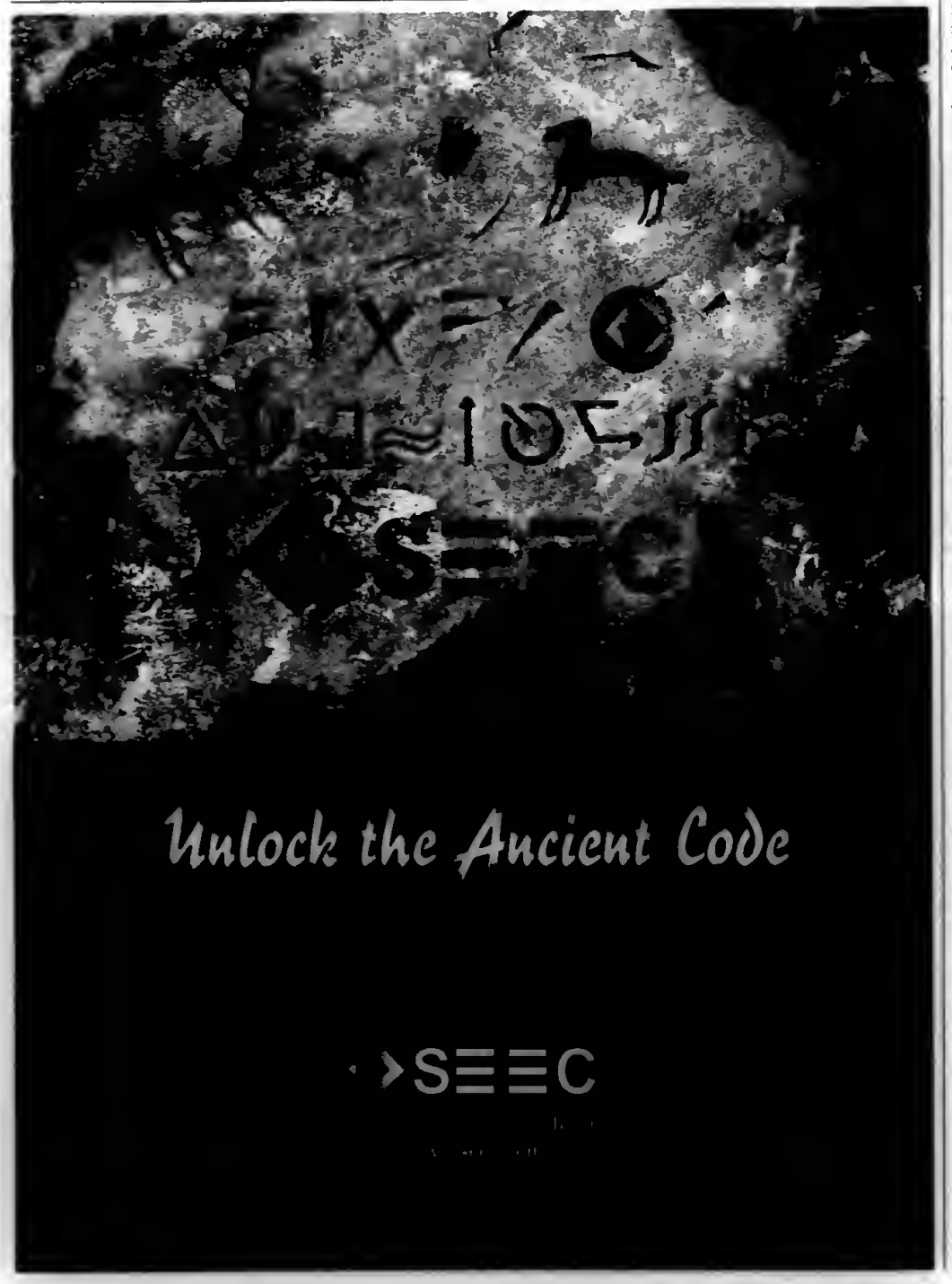
Such complaints — and a decision by New York-based The Warnaco Group Inc. to stop installing the Apparel and Footwear Solution (AFS) add-on to R/3 — prompted SAP to assign more developers to the product and set up a SWAT team to work directly with users [CW, May 10].

AFS is a key part of SAP's efforts to expand beyond its traditional manufacturing strongholds. About 60 apparel and footwear makers bought the software since last spring.

Reebok already uses AFS to run its golf shoe division and some international operations. Only a tiny percentage of the 1,200 transactions built in to the software are having problems, Burrows said. But inventory checks are taking "well over two seconds," he added — too slow to handle the sales volumes of Reebok's domestic sneaker business.

VF, a maker of jeans and other clothing in Greensboro, N.C., set a deadline of today to get bug fixes it needs to start stress-testing a full R/3 and AFS system in late June.

Most of the problems have been resolved. But slow progress on a piece of AFS that lets manufacturing jobs be grouped together prompted VF to send two project members to SAP's development lab in Germany last week, said Leroy Allen, VF's vice president of re-engineering. Now, it looks like all key issues will be fixed on time, he said.



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DEVELOPERS ASK FOR WIN 2K HELP

Microsoft beefs up Web-based aid, posts model app source code

BY DAVID ORENSTEIN
DALLAS

HOWEVER scalable Windows 2000 and its COM+ component framework turn out to be, many developers at Microsoft's TechEd conference last week said they need a clearer picture of how to build the enterprise applications Microsoft asserts are possible.

To address that concern, Microsoft Corp. is taking several steps to ease users into an enterprise frame of mind. One of those steps is posting online the complete source code of a model stock-trading application, written in Visual Basic (see chart).

In recent weeks, Microsoft officials have acknowledged that developers may need more guidance migrating Windows from smaller client/server roles to Distributed Internet Architecture (DNA) applications. Visual Studio lead product manager Gregory Leake said last week that when developers fall short of optimizing Windows applications, "that's not their fault, that's our fault."

Having actual source code online could offer the guidance developers at Minnesota Life Insurance Co. in St. Paul need, said Peter F. Krahn, senior technical analyst at the company. "Are [we] doing it right? That's what I'd like to know more about," he said. The concept of DNA is easy to understand, Krahn added, but at the level of providing details about how the technologies integrate, "that's where they have been lacking."

Several other developers agreed it hasn't been clear how or whether tools and technologies like COM+ and Microsoft Transaction Server add up to multitier, scalable Internet-based applications. "It's hard to get a sense or a feel of how all of it fits together," said Keo Raney, a consultant at Royal Dutch/Shell Group's IT services unit in Houston.

In addition to providing better support online, Microsoft also needs to provide more on-site and consulting support akin to what enterprise vendors such as IBM do, developers said. "From my perspective, we have a lot of Microsoft products in here, but there really is no support from them," said Stan Richardson, a development manager at The Chase Manhattan Corp. in Tempe, Ariz.

To address such criticisms, Microsoft last month announced a reorganization into customer-focused business units including ones focused on enterprises and developers [CW, April 5].

Despite some unanswered questions, developers said they have little doubt that they will be developing DNA applications.

"It's so new that there are very few developers who have already done this," said John Szczypinski, senior systems analyst at pharmaceutical giant Glaxo Wellcome Inc. in Research Triangle Park, N.C. Nevertheless, he said he plans to recommend that a large clinical study tracking application written in PowerBuilder be converted to Visual Basic to take advantage of Microsoft's DNA architecture.

Developing Developers

Steps Microsoft is taking to better support developers as they gear up for multitier distributed applications on Windows NT.

Visual Studio Scalability Center: A Web page on the Microsoft Developer Network (MSDN) that contains documentation, hints and studies on building large-scale applications (*http://msdn.microsoft.com/vstudio/downloads/scale/fmstocks.asp*).

Office 2000 Developer edition – Shipping on June 10, it will include a Code Librarian with samples of how best to develop applications using Office.

MSDN: Overhaul includes a service that links experts to developers. Future plans: Making context-sensitive searches of MSDN available within Visual Studio.

SOURCE: MICROSOFT CORP., REDMOND, WASH.

Microsoft Eyes Scalability, Interoperability

Offers glimpse of tools to help developers build more reliable Windows 2000 apps

BY DAVID ORENSTEIN
DALLAS

Developers at Microsoft Corp.'s TechEd conference last week got a taste of several new Windows 2000 technologies designed to increase application scalability and interoperability.

Developers said the upcoming services — for which Microsoft provided scant detail — could help their efforts to build scalable, reliable applications on Windows 2000.

Microsoft unveiled four new services for COM+, the next generation of Microsoft's component framework, and a new middleware technology code-named Babylon. The COM+ services are due with Windows 2000 later this year, and Babylon will be in beta testing by then.

The goal is to make distributed server-side development as easy as graphical interface creation is today, company officials said.

For instance, one of the new services under COM+ is in-memory database caching. On the client or server, that could speed up the performance of a system using Microsoft's SQL Server 7.0 to monitor the market for irregular activity, said Ann Neidenbach, vice president of systems engineering at the Nasdaq-Amex Market Group in Gaithersburg, Md. "We would be all over that," she said.

Brian Kalita, an analyst at Aberdeen Group Inc. in Boston, said that because memory prices are low, loading up on RAM and hosting databases within it is a good way to improve performance. "If [Microsoft's attempt] works, that's an excellent idea," he said.

Microsoft's announcement that the company will enhance load-balancing services for components in server clusters also encouraged Neideobach, who said the market's developers had been engineering such capabilities on their own. "If we can leverage that within NT, that would be tremendous," she said.

Rather than making development easier, Mitchell Kramer, an analyst at Patricia Seybold Group in Boston, said the enhanced load-balancing services could require developers to roll up their sleeves to get it working correctly.

Adding to COM+

In a bid to bolster the scalability and performance of Windows 2000, Microsoft announced four new services for its COM+ component framework at TechEd.

QUEUED COMPONENTS
Same tasks are performed whether or not states are connected

IN-MEMORY DATABASE
Cache data on the middle tier for faster data access

EVENTS
Publish/subscribe event triggering on the server side

LOAD BALANCING
Components run on the least-loaded server

Sites Promote Use of XML in E-Commerce

Some fear two new sites is too many

BY CAROL SLIWA

Two separate Web sites were launched last week in a bid to stimulate business use of Extensible Markup Language (XML) to exchange data in electronic-commerce transactions.

Microsoft Corp.'s BizTalk.Org and the nonprofit Organization for the Advancement of Structure Information Standards' (OASIS) XML.org both claim to serve as reference spots and open repositories for the XML schemas, or data description sets, that companies and vertical industries will use in business transactions.

Microsoft Joins Up

Recognizing that the two sites have similar goals and might be viewed as competing, Microsoft late last week joined the OASIS effort, backed by IBM, Oracle Corp., Sun Microsystems Inc. and others.

But that might not clear up all the confusion surrounding the myriad business-related XML efforts currently under way, analysts said.

"I don't think either of them will be the only [site] out there," said Rita Knox, an analyst at Gartner Group Inc. in Stamford, Conn.

"The issues that are preventing XML adoption are not being solved," said Vernon Keenan, an analyst at Keenan Vision Inc. in San Francisco. "There's still complete confusion on exactly how two XML servers could communicate and do something simple like confirm a price for an item or buy a catalog item."

In other news last week, Microsoft released a draft BizTalk specification for public review and formed a BizTalk steering committee that includes several key enterprise resource planning vendors and customers, such as The Boeing Co. and Merrill Lynch & Co.

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BRIEFS

CSC Wins $50M Pact For Medicare

Computer Sciences Corp.'s Civil Group in Falls Church, Va., has won a contract valued at up to $500 million with the Health Care Financing Administration. CSC's services will include audits and data analysis to protect against Medicare fraud.

CA Profits Up 8%

Computer Associates International Inc. in Islandia, N.Y., last week reported a $457.9 million profit for its quarter ended March 31, an 8% increase from the year-earlier period. CA's revenue came in at $1.63 billion, up 11%.

J. D. Edwards Posts $10.4M Loss in Q2

J. D. Edwards & Co. last week reported a $10.4 million loss for its second fiscal quarter ended April 30. Total revenue increased 11% to $231.6 million at the Denver-based developer of enterprise resource planning applications.

Y2K: Bug Or Virus?

Trend Micro Inc. said its InterScan VirusWall is the first product to treat the year 2000 bug as a virus. The product will scan e-mail attachments such as spreadsheets for Y2K compliance and alert the network manager or recipient about noncompliant dates. The software will ship in the third quarter.

Short Takes

Enterprise resource planning rivals SAP AG and BAAN CO. both plan to bundle Internet communications software developed by San Jose-based BACKWEB TECHNOLOGIES INC. into upcoming applications. . . . PEOPLESOFT INC. in Pleasanton, Calif., last week announced a scheme designed to get its core business applications installed in six months or less. . . . HEWLETT-PACKARD CO. and UNITED PARCEL SERVICE OF AMERICA INC. in Atlanta said they will develop a digital delivery product for sending and tracking paper-based documents over the Internet.

SAP REACHES OUT TO MIDMARKET

R/3 packages designed for 3-month rollouts

BY CRAIG STEDMAN

SAP AG this summer plans to sharply ratchet up its attempt to reach out to smaller users by offering easy-to-install versions of its R/3 applications that are tailored for specific industries.

The Germany-based enterprise resource planning (ERP) vendor last week released a version of its Accelerated Solutions bundle for makers of automobile parts with less than $500 million in annual revenue. And it said eight more vertical packages are due out by September, including ones for key industries such as chemicals, pharmaceuticals and retail.

Users are supposed to be able to install those bundles in three months or less — much less time than the year or more it can take to put in the regular R/3 applications. Creating such easy-to-install packages is critical to SAP's chances of persuading small and midsize companies to buy R/3, said John Hagerty, an analyst at AMR Research Inc. in Boston.

"The expectation these users have when they deal with SAP is it's going to take forever [to install R/3], and SAP needs to allay that fear right off the bat," he said.

Until the last couple months, the Accelerated Solutions line included only general-purpose versions of R/3's financial, logistics and human resources software. Those may be too generic for users, Hagerty said.

For example, Global Crossing Holdings Ltd., a Bermuda-based company that's building a worldwide fiber-optic network, had to customize the financials package during installation late last year.

"Our business is just not your plain-vanilla business," said Sheryl Grossman, an information technology director at Global Crossing.

The company limited the initial rollout to SAP's general ledger and accounts payable and receivables modules so as to fit the customization work into its three-month installation schedule, she added.

But SAP did a good job of mapping out the process, Grossman said, and R/3 was the best fit in a business sense.

Other ERP vendors are also targeting smaller users with special packages. For example, Oracle Corp. next week plans to add a rapid-rollout version of its budgeting software — increasing the number of packages in its 9-month-old Fast-Forward line to eight.

Entrust Takes On VeriSign

Digital certificate market is booming

BY ANN HARRISON

In response to growing demand for secure e-commerce tools, Entrust Technologies Inc. in Plano, Texas, has launched a new unit, Entrust.net, to issue digital certificates for authenticating Web servers.

The unit makes Entrust a direct competitor with VeriSign Inc. in Mountain View, Calif., which has 75% of the certificate market.

Server certificates support online transactions using the Secure Sockets Layer protocol. When users enter credit-card numbers, their browsers will check the merchant's server certificate to ensure that the digital signature is correct and to validate a Web site's identity.

Entrust's Entrust/Web Connector product already allows companies to become certificate authorities and issue client-side Web certificates that authenticate consumers to Web and e-mail services. Entrust.net plans to eventually offer the service.

Ted Julian, an analyst at Forrester Research Inc. in Cambridge, Mass., said Entrust's move into the market makes sense but could put it in channel conflict with its own customers. "This is business they couldn't afford to leave on the table," Julian said.

Market Leader

VeriSign has dominated the certificate market through its partnerships with Netscape Communications Corp. and Microsoft Corp. The two companies include in their browsers a file called a root certificate. The browsers recognize the products of a particular certificate authority and verify a Web site's certificate only if it includes the root certificate of the company the site purchased it from.

Only a handful of companies — including VeriSign, GTE Corp., AT&T Corp. and a certificate authority called Thawte Consulting in Cape Town — have their root certificates installed in users' browsers. In order to compete, Entrust licensed a root certificate from Thawte.

Microsoft Previews Platinum

Exchange version tied tightly with Win 2K

BY DOMINIQUE DECKMYN

Users and analysts last week applauded Microsoft Corp.'s move into knowledge management with its next-generation Exchange Server, Platinum.

But the Microsoft vision may be hard to execute, they cautioned, because it will require a deep commitment to Microsoft products on the client/server. The cornerstone of Microsoft's knowledge management strategy is Platinum, the next version of Exchange. It is slated to ship within 90 days of Windows 2000, which is officially due by year's end.

Key Features

At its TechEd conference last week, Microsoft outlined two key features: Digital Dashboard, a kind of personal portal in Microsoft's Outlook client; and Platinum Web Store, a common storage location for messages, documents and Web pages.

Web Store is what Microsoft hopes will transform its messaging server into a rich document warehouse to rival Lotus Domino. "This is a frontal assault on the knowledge management aspects of Lotus Notes," said Steve Robins, a senior analyst at The Yankee Group in Boston.

The tight integration with Windows 2000 and Office 2000 will actually give Platinum a certain advantage over Lotus in this area, added Tom Austin, an analyst at Gartner Group Inc. in Stamford, Conn.

For instance, users will be able to access documents stored in the Web Store from various applications such as Windows Explorer and Office 2000 — rather than just from the Notes client.

Digital Dashboard will be a single place to access personal and business data. That appeals to users like Lester Morgan, information systems manager at the National Football League in New York. "We've been wanting to integrate the desktop around Outlook for a couple of years . . . but the data wasn't accessible enough through Outlook," he said.

"In terms of technology, [Platinum] is clearly the direction we want to go in," said Greg Scott, IS manager at the College of Business at Oregon State University in Corvallis. The college is already rolling out Office 2000, and Scott said the tight integration of Office 2000 and Platinum should make it easier for users to publish documents on the Web.

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HDS JUMPS IN WITH 8-WAY NT SERVER

City of Boston already using VisionBase 8880R server to run high-volume Web site

BY STACY COLLETT

HITACHI Data Systems Corp. last week announced the availability of its Profusion-based eight-way Windows NT server — the first on the market. And in another first, the city of Boston is using the eight-way server to run its high-volume, transaction-oriented Web site.

Eight-way servers double the processing power that's currently available on four-way servers and increase the number of end users each server supports.

The city, which began evaluating the technology in December, chose HDS's VisionBase 8880R server to run the CityofBoston.com Web site. The site lets citizens pay vehicle taxes, parking tickets and dog license fees online.

The Web site requires extra horsepower because it's based completely on ActiveX Server Pages, using Microsoft Corp. SQL Server 7.0 and Microsoft Transaction Server, whereas most sites are written in basic HTML, the Web programming language. With the VisionBase server, Boston's Web site handles more than 3.5 million hits per month and more than 5,000 visitors daily, said W. Todd Sims, director of technology for the city, in a statement.

HDS, based in Santa Clara, Calif., got a head start on eight-way NT server technology because of its co-development and license relationship with Irvine, Calif.-based Corollary Inc., which developed the Profusion architecture before being acquired by Intel Corp.

"Hitachi may be significant because they are the first. But the top Intel server suppliers will be offering eight-way systems within the next six months, if not sooner," said James Gruener, an analyst at Boston-based The Yankee Group. Unisys Corp. and Hewlett-Packard Co. have already announced plans to ship eight-way servers as soon as the Profusion chip is shipped.

Intel is scheduled to release the Profusion chip this fall, said spokesman Bill Kircos.

Hitachi's 8880R server has 15 64-bit and three 32-bit Peripheral Component Interconnect slots and two Industry Standard Architecture expansion slots, according to Andy Dymoke, senior product manager. Its CPU, memory, disk drives, I/O and network subsystems options are fully upgradable.

The VisionBase servers cost from $50,000 to $200,000, depending on configuration.

Eprise Tool Offers Easy Intranet Security

Site content can be updated by nontechies

BY DOMINIQUE DECKMYN

Eprise Corp. last week released a version of software that lets nontechnical employees update the content on intranets, extranets and Web sites but also provides management tools and security.

EMC Corp., the computer storage vendor based in Hopkinton, Mass., plans to use Eprise Participant Server 2.0 to build several intranet and extranet sites.

EMC already has used it to implement an intranet with marketing information, targeted at about 5,000 EMC employees. The site is regularly updated with the latest materials by two marketing employees who have received two days of training.

"Eprise lets us [in the information technology department] eliminate ourselves as a middleman," said John Faherty, director of advanced development and technology at EMC. The software is expected to free up two full-time IT workers, he said.

Faherty said the package's strength is that it lets end users publish documents but maintains a strong security model that makes it easy to assign different levels of access to different categories of users. Employees will see different content based on their role in the company.

Eprise, based in Framingham, Mass., released Participant Server early last year. Version 2.0 adds support for Extensible Markup Language (XML), as well as additional workflow features for content approval.

The software is priced at $50,000 per server, with no separate client licenses.

Another user of Participant Server is John Analambidakis, vice president of systems at Hemisphere Group Inc., a life insurance provider in Cambridge, Mass. He said he hopes an upgrade to Version 2.0 will let him use XML to tie information such as stock quotes and mutual fund information into his Web site.

"[Eprise] has got a nice solution for companies that are trying to do personalization but don't want to go into complex and pricey solutions," said Donovan Gow, an analyst at Aberdeen Group Inc. in Boston.

Visa Offers Direct Online Processing

BY STACY COLLETT

Visa U.S.A. Inc. last week announced a service that provides a direct line to Internet transaction processing.

Visa's Internet Payment Gateway, available late next month, uses software developed by Trintech Inc., in San Jose, Calif., to authorize, capture, route and settle all Internet financial transactions. It will support both Secure Socket Layer and SET protocols.

Online merchants will benefit from faster processing and the added security of digital certificates technology provided by VeriSign Inc.

Merchants that once relied on third-party providers for secure payment processing can now go directly through their banks for the Visa service, a Trintech spokesman said. Visa will charge banks a usage fee for the service.

Steve Ryan, Visa U.S.A.'s senior vice president of emerging technologies, said the service is geared toward large banks that haven't built their own Internet gateways. But Theodore Iacobuzio, an analyst at TowerGroup in Needham, Mass., said it will be more popular for smaller and mid-size banks.

Continued from page 1

DECUS

formation to the members.

"A mistake was made in releasing confidential information," said a DECUS officer who asked not to be named. "A lot of what is going on now is exploratory — you don't want members confusing ideas for definite plans," he said.

"What was disclosed was the timetable for the implementation of the new user group," insisted Killeen last week. He said he went public with details because of the surprising speed at which the merger was being pushed, and the way that information was being kept from the membership at large.

A "fast-track" plan being considered by the task force could have resulted in a merger in two months, but that may be pushed back as a result of member protests, he said.

"How the new user group ends up is what I am concerned about," Killeen said. "It should not be something that becomes a marketing arm for Compaq."

Tony Bond, vice chairman of ITUG in New South Wales, Australia, confirmed a task force has been created "with equal representation between DECUS, ITUG and Compaq." He said a statement on the future of the two groups will be announced after the task force meets at the end of this week.

Though both groups are independent, many of their events and seminars are funded or sponsored by Compaq.

One is Enough

"Compaq wants a single user group — and fast," said another DECUS board member, who also requested anonymity. "They really don't want to have to deal with and fund DECUS and ITUG and all the separate international chapters."

Compaq spokesman Simon Eastwick would say only that "we are very much in support of them moving forward together with ITUG and forging a common user group."

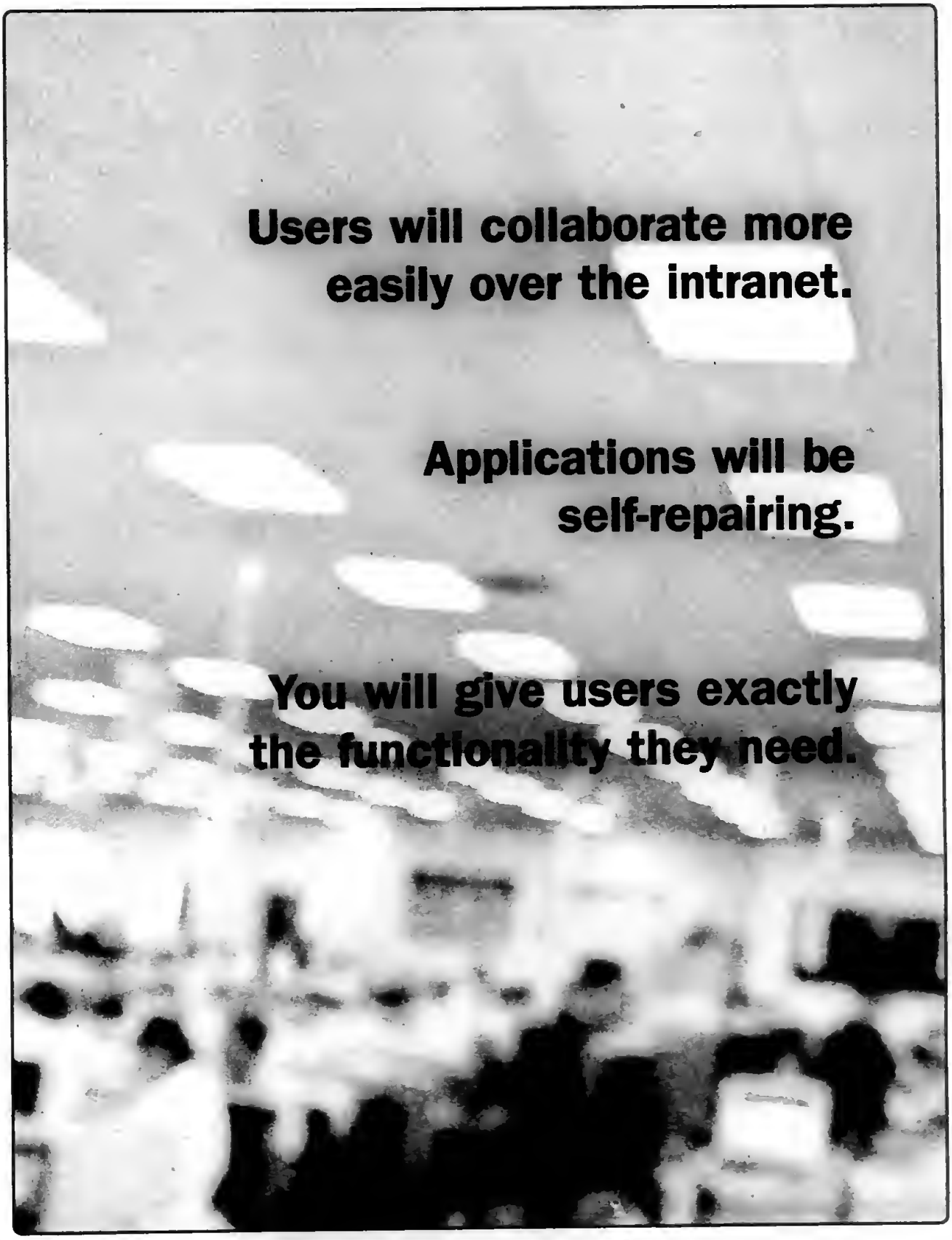
Under a merged organization, DECUS, ITUG and possibly a new Windows NT user group would exist as special interest groups, the board member said.

News of the planned merger — and the way that news was made available — prompted online discussion that centered equally on the propriety of Killeen's action, the board's action against him and the proposed merger.

Concerns that Compaq will have a much more influential role in the new user group — and may even use it to market its technologies — may be prompting a lot of the member concern, acknowledged the first DECUS director.

"The tone [on future list serve postings] will be, 'We smell a rat here.' But if the new user group leadership addresses all the red flags, than maybe the [unified group] is an idea whose time has come," said one posting at the OpenVMS newsgroup last week.

"The most important role of DECUS is to influence Compaq's direction on OpenVMS," said Wayne Sewell, president of Tachyon Software Consultancy and a former DECUS member, in Humble, Texas. "So long as OpenVMS is represented in the new organization, I don't have a problem with the merger."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Report: NASA System Vulnerable Because of Lax Security

BY ANN HARRISON

The General Accounting Office was able to hack into NASA systems that contained sensitive space mission data because the National Aeronautics and Space Administration didn't follow its own security measures, according to a report on the incident.

The GAO, the investigative arm of Congress, said it penetrated several mission-critical systems used to calculate the positions of orbiting spacecraft and distribute information received from those craft. The probe reviewed computer systems at one of NASA's 10 field centers. The report was released in May.

"Having obtained access to these systems, we could have disrupted NASA's ongoing command-and-control operations and stolen, modified or destroyed system software and data," the report said.

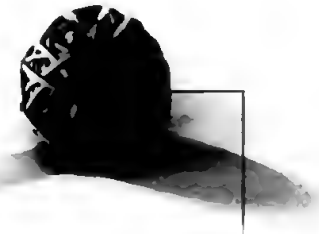
The GAO team said it was able to carry out the exploit because NASA wasn't effectively or consistently managing information technology security throughout the agency as outlined in a 1998 GAO guide. According to the report, NASA didn't even meet its own requirements for adequately evaluating security risks for 135 of the 155 mission-critical systems reviewed. It also didn't provide security training to systems managers.

NASA spokeswoman Sarah Keegan insisted that IT security is a high priority at the agency, which, she said, takes "extraordinary steps" to protect certain computer systems and networks. But Keegan said NASA plans to make improvements. "The GAO has some valid criticisms of the way NASA handles IT security," she said. "We agree with many of their findings and plan to implement all their recommendations."

The report charged that NASA didn't make recommendations to its security managers for protecting mission-critical systems from known threats. The agency also didn't specify what information should be posted on public Web sites, an important directive for ensuring that the agency doesn't inadvertently release sensitive information.

Sen. Fred Thompson (R-Tenn.), who commissioned the GAO report with Sen. Joe Lieberman (D-Conn.), noted that NASA spent more than $1 billion last year on information systems to support a range of missions, including the space shuttle, the International Space Station and *Mars Pathfinder*.

"Now we're learning that the security and integrity of many of these computing systems is vulnerable to attack," Thompson stated. "At the same time, there is no security training system in place, and security incidents are not being reported. That's unacceptable."



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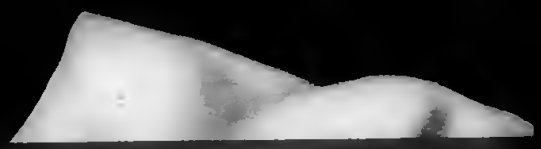

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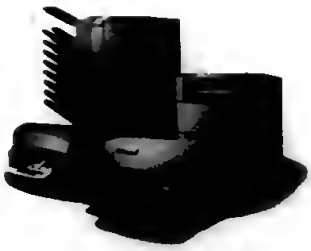

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Continued from page 1

Enterprise Vendors Retool

HP recently said it will build on its electronic-services thrust with new brokering software called espeak. The technology will allow companies to convert Web sites into sophisticated information hubs that can communicate and exchange information among multiple applications and e-commerce sites [CW, May 17].

HP's latest efforts should lend momentum to its unfolding electronic-services strategy. Since early this year, the company has been trying — mainly through partnerships and acquisitions — to offer users a full palette of Internet technologies and services. One example of its partnering strategy is the $100 million alliance it announced last month with BEA Systems Inc. for middleware technologies.

HP isn't the only vendor making such moves. IBM has been making similar shifts over the past two years and already claims to be making more than a quarter of its revenue from e-commerce-related sales.

IBM's success is the result of sweeping efforts to transform the company into a sort of one-stop shop for a wide range of Internet technologies and services. Almost all IBM hardware, from its Intel-based PC servers to its highest-end mainframe systems, now have Web hooks — like integrated Web application servers, Web-to-host connectivity tools, Java support and messaging middleware. The company has also developed a series of new e-commerce application suites — like its Net.Commerce and Net.Data software — and new services like its IBM Enablement Service for E-Business aimed at helping companies tie their existing informatioo technology infrastructures to the Web.

And earlier this month, Suo announced an initiative, called ServiceProvider.com, that provides technology and service bundles to help Internet and application service providers deliver application hosting, e-commerce services and network management outsourcing services. Compaq, meanwhile, recently launched the NonStop E-Business initiative, aimed at delivering high-availability technologies and services for Web applications.

Shift to Service

This wholesale embrace of the Internet accelerates a shift already under way among enterprise vendors from a hardware-driven revenue model to a services-driven one, said Laurie McCabe, an analyst at Summit Strategies Inc. in Boston.

"'Adapt or perish' is the maxim of the Internet Age," McCabe said. "Traditional system vendors must develop an Internet cachet to survive and flourish."

Pushing them are users who are increasingly looking for help with everything from selling products online to Internet-enabling their supply chains, shop floors, distribution systems, sales networks and customer touch points (see related story at right).

"As our online business grew, we found ourselves spending more and more time upgrading our capabilities and developing software to meet our technology needs instead of doing what we do best — selling outdoor gear and clothing," said Matt Hyde, vice president of online services at REI Inc. in Seattle. So "e-commerce needs to be a core competency for companies . . . to be of value to us."

E-commerce needs to be a core competency for companies . . . to be of value to us.

MATT HYDE, VICE PRESIDENT ONLINE SERVICES, REI INC.

Modification

Along with any new technologies, what is likely to be equally significant for users is the effort vendors are putting into modifying their existing products — with things like Java hooks, TCP/IP support and application integration middleware — and deploying new financing models and high-availability services for e-commerce, said Jonathan Eunice, an analyst at Illuminata Inc. in Nashua, N.H. For example, consider the following:

- A major differeotiator for HP is an innovative new risk-sharing financing model under which the company will front the cost of hardware and software in return for a cut of a customers' future e-commerce revenue [CW, May 3]. Another HP strategy is to promote high-availability for e-commerce applications. Examples include the company's Quality of Service initiative for prioritizing network use and its Five Nines program guaranteeing 99.999% application-level availability.
- IBM, meanwhile, is hoping to cash in oo its vast technology portfolio. Products like its S/390 servers, DB2, MQSeries, the WebSphere application server and the Net.Commerce e-commerce package form the core of its e-commerce technology offering. Layered atop it are services — ranging from Web consulting to helping customers build Web-based electronic data interchange applications and secure networks — from its 130,000-strong services organization.
- Sun has been trying to leverage its recent partnership with Netscape Communications Corp. and America Online Inc. as a way of expanding its presence in the application hosting services and Internet service provider markets. For instance, Sun is offering Netscape's Web application server as an option to its users, and both companies are working on developing new messaging software that will let companies integrate applications via the Web.

Meeting Goals

What the vendors are trying to do "is a desirable thing, but the question is whether they have the operational capability to deliver the required services," said Michael Sellitto, director of IT services at Rich Products Inc., a processed food manufacturer in Buffalo, N.Y. IBM, with its vast services capabilities, today has managed to show that it can deliver the kind of integration needed, Sellitto said.

For the others, a lot will depend on their ability to partner with vendors to acquire the capabilities they don't already own, McCabe said. Hardware vendors will also have their work cut out convincing users that they have the necessary service capabilities.

Steve McKown, director of technology at Celestial Seasonings Inc. in Boulder, Colo., said he doesn't see services as a core competency of hardware vendors. HP currently provides the Unix servers that power the company's business. "However, their initiatives to provide a full-service solution to e-business hasn't really [reached] us in a meaningful way" yet, McKown said.

Consumers Digest Inc. a Skokie, Ill.-based publisher of purchase advice and product evaluations, recently implemented a Web initiative to sell its data to other e-commerce sites. HP was the primary hardware supplier for the project.

Going forward HP's role could be broadened "if it can demonstrate how its [Internet] software can improve our business," Mitchell said.

IBM	S/390, RS/6000 and AS/400 servers	WebSphere application server, Net.Commerce, IBM MQSeries, DB2
HP	HP 9000, HP 3000	HP Praesidium, Change Engine, VeriFone, Web QoS
Sun	E10000, E6500, E6000	Sun Internet Mail server, Netscape Messaging server, NetDynamics application server, BuyerXpert
Compaq	AlphaServer, NonStop Himalaya servers, ProLiant servers	Compaq Active Answers, ProLiant E-Commerce server

Web Key to Business Future

The industrywide race between software and hardware suppliers to transform themselves into Internet companies comes at a time when corporations around the world see the Web as fundamentally changing the way they do business.

A recent global survey of 600 executives in more than 55 companies by Booz Allen & Hamilton/Economist Intelligence Unit showed that more than 92% of respondents said the Internet will reshape the world marketplace by 2001.

Extranets – which link companies with business partners, suppliers and customers – were seen by 88% of the responding companies as the most promising way to take advantage of the Internet.

At the same time, though, 30% of the respondents said getting to such benefits will mean major IT and business process overhauls – precisely the opportunity that vendors have been rushing to tap.

For instance, although 89% of the companies surveyed had basic Web sites, only 56% were providing any level of customer service over it, and just 37% were actually doing online commerce, according to the Booz Allen survey.

– Jaikumar Vijayan

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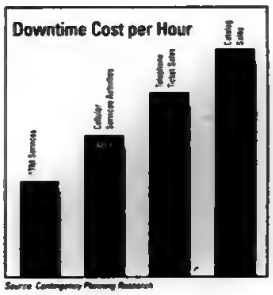

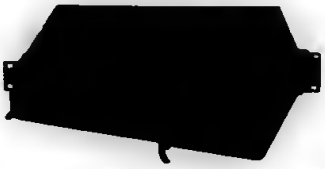

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FIRMS BUYING APPS VIA WEB

Oracle plans to take all software orders online; users see convenience but want easier demands

BY STEWART DECK

MANY business users are favorably eyeing online purchasing and delivery of software for the simplicity it provides and the headaches it cures.

So when Larry Ellison, CEO of Oracle Corp., recently pledged that his company would take all its software orders online in the next year, Oracle users were supportive — despite the fact that the company often misses its target delivery dates.

Oracle isn't alone on this road. Microsoft Corp., which had approximately 8% of its $14.5 billion software revenue from online sales last year, opened a new section of its Web site (*www.shop.microsoft.com*) in February to serve online software shoppers.

By 2002, Jupiter Communications Inc. in New York predicts, 35% of all software will be bought online, much to the chagrin of software resellers.

Users and analysts said increasing the availability of online ordering and delivery would be welcome and useful if a few kinks are worked out.

"I applaud that move. For the last couple of years, I've been trying to get software online as much as possible because it's so much easier," said Andy Martin, chief technology officer at Garden Escape Inc. in Austin, Texas, the operator of Garden.com, a Web-based business.

ANDY MARTIN at Garden Escape says buying software online is easier - but has its drawbacks

But Martin said there are a few drawbacks to buying software online. "I've found that the [registration] keys are only good one time. Every time you reinstall it, you need a new key. That's sometimes a bit of a pain," he said. "And you don't necessarily have a good record of where the software is. Since you never have real CDs or invoices, you lose track of where they are."

But that happens with actual CDs and manuals, too, said Ed Leard, information systems general manager at Yamaha Corporation of America in Buena Park, Calif. Nonetheless, huge download files could be problematic, Leard said. "You could choke bandwidth with some downloads," he said. "Users need to look at tools that let them reserve portions of [network] pipes just for downloads."

CDs may still hold some advantages. "If you have problems and need to reinstall one piece, it may be a lot easier right now to do it from CDs," said Carl Olofson, an analyst at International Data Corp. in Framingham, Mass.

The advantages for the software vendors are obvious: significant savings in manufacturing and shipping costs. "And electronic delivery should give them more control over license management for corporate customers," added Melissa Bane, an analyst at The Yankee Group in Boston. ▶

Intel, HP Promise Apps for Merced

BY JAIKUMAR VIJAYAN

Intel Corp. and Hewlett-Packard Co. last week moved to ensure that there will be applications available for users of systems based on the forthcoming 64-bit Merced processor.

The IA-64 Application Instruction Set Architecture Guide — which Intel and HP posted on their Web sites — will let developers optimize applications for IA-64 architectures.

IA-64 is a chip architecture that Intel and HP have been jointly working on since 1994.

Unlike current-generation complex instruction set computing and RISC-based systems, IA-64 uses technology called Explicitly Parallel Instruction Computing. The technology promises to let users run both Windows NT and Unix applications equally well — and at a lower cost than current RISC-based servers.

The first chip based on the technology — code-named Merced — will become available by June 2000.

Last week's announcement "removes any uncertainty about what developers need to do to get their applications running" on IA-64 systems, said Dean McCarron, an analyst at Mercury Research Inc. in Scottsdale, Ariz.

To support applications for Merced, Intel recently announced plans to invest $300 million to fund software development activity around Merced. ▶

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BRIEFS

SEC Charges 25 With Lotus Insider Trading

The U.S. Securities and Exchange Commission charged a former IBM secretary and 24 other people with insider trading on Lotus Development Corp. securities for six hours in June 1995 just before IBM's hostile takeover bid became public. The secretary and three others settled by paying $250,000 in fines. The case is still pending against the other defendants for allegedly reaping $1.3 million in illicit gains.

Intel Agrees to Buy Williams Stock

Intel Corp. has agreed to purchase $200 million in Williams Communications Inc. stock in a deal that makes the Tulsa, Okla.-based firm a network services provider for Intel's new Internet data services unit. Williams Communications is due to provide high-capacity network transport links between data services facilities. Intel plans to build a network of data centers to host, manage and deliver applications for Web content (CW, April 26).

Hitachi Posts Loss

Slack sales of mainstay products and a stubbornly weak domestic economy led Japanese computer vendor Hitachi Ltd. to post a net loss of $2.8 billion for its year ended March 31. The Tokyo firm blamed its first loss since the end of World War II on sluggish semiconductor sales and Japan's economy. The company said it expects to return to profitability this year.

Short Takes

Netherlands-based BAAN CO. said Mary Coleman – its president since last fall – will become CEO and chairman of its management board next month. . . . APPLE COMPUTER INC. in Cupertino, Calif., appointed the president and CEO of GAP INC. to its board of directors. . . . L. M. ERICSSON TELEPHONE CO. and QUALCOMM INC., as part of a deal for Ericsson to buy Qualcomm's wireless infrastructure business, said they would cross-license their patents relating to Code Division Multiple Access wireless technology.

PEOPLESOFT SEEKS REFINED FOCUS

Newly named president calls for narrowing company's strategic direction within 90 days

STRUGGLING PeopleSoft Inc. last week wrapped up its search for a president and chief operating officer, hiring **Craig Conway** to take over those jobs from CEO and co-founder **David Duffield**. Conway, 44, is a former Oracle Corp. executive and most recently headed remote-training software developer OneTouch Systems Inc. in San Jose.

Like other vendors of enterprise resource planning (ERP) applications, PeopleSoft has hit the sales wall this year due in part to users putting off new investments until the year 2000 date change passes. *Computerworld* senior editor Craig Stedman talked with Conway and Duffield about their plans for righting PeopleSoft.

NEW PEOPLESOFT President Craig Conway says he wants one direction

Other PeopleSoft officials said the Pleasanton, Calif., company may drop some industry-specific applications, reduce the hardware it supports and cut back on plans to expand into foreign countries. But Conway and Duffield wouldn't comment on the specific moves they're considering.

CW: What does PeopleSoft need to do differently?

Conway: I haven't been here long enough to really get under the covers. But on the surface, if the company has suffered from anything, it's not settling on one strategic direction but [having] four or five or six. Even companies as large as PeopleSoft shouldn't try to go in six directions at one time.

CW: What things might you stop working on?

Conway: I don't want to seem evasive — I just don't know. But if we haven't figured out what to heavily invest in within 60 to 90 days, something's wrong.

CW: Dave, how long do you expect to remain at PeopleSoft?

Duffield: I'm going to stay on as CEO for the next six to 12 months. One of the criteria Craig had to meet was that he could replace me as CEO, and I sure hope he turns out to be that person.

Beyond that, I expect to stay as chairman. I think I still have a role to play, and a significant one at that.

CW: How do the two of you plan to work together?

Duffield: Craig is basically responsible for all day-to-day activities. I'll be involved in setting the strategic direction of the company, and I'll literally work for Craig in doing [user] site visits and that sort of thing. But Craig is the person to really manage PeopleSoft in its entirety.

DAVID DUFFIELD, PeopleSoft's CEO, expects sales to pick up

CW: When do you expect sales to start growing again, and does that depend on your new e-commerce and business analysis applications catching on?

Duffield: I think it's far more dependent on where companies stand with their year 2000 fixes. I fundamentally believe there's going to be a nice pickup [in sales] in the latter part of this year as those projects move into an observation mode.

CW: Craig, why join a company like PeopleSoft when it and other ERP vendors are struggling?

Conway: I've been through a challenging period, right in the middle of my Oracle experience, in 1990. That was so much more complex than the challenges faced by PeopleSoft or SAP or Oracle today, and we came out of that a lot stronger than we were. I just don't see the challenges [facing us now] as being that significant.

Initial Ruling In Java Suit

Microsoft to rebut; Caldera suit ongoing

BY KIM S. NASH

Various Microsoft Corp. legal battles progressed last week, with tentative rulings in Sun Microsystems Inc.'s Java suit and more detailed evidence revealed in Caldera Inc.'s antitrust case.

The judge in the Java case, in U.S. District Court in San Jose, said Microsoft violated Sun's copyrights on Java when Microsoft shipped products that didn't comply with Sun's specifications. On the other hand, Microsoft may be allowed to build its own version of Java technology, the judge suggested, so long as it doesn't use any of Sun's intellectual property.

The tentative rulings aren't final decisions; the judge could change them after hearing arguments from both sides June 24.

Not Giving Up

In U.S. District Court in Salt Lake City, Linux vendor Caldera filed responses to Microsoft's bid to have most of the 3-year-old case dismissed. For example, Caldera repeated claims that Microsoft spread fear among users and jiggered its software so that it appeared the DR-DOS operating system, which Caldera now owns, wouldn't work with Microsoft products. The trial is scheduled to start Jan. 17.

Informix Settles Lawsuits Over Earnings Restatements

BY ELINOR MILLS
SAN FRANCISCO

Informix Corp. has announced a settlement worth $142 million to resolve shareholders' lawsuits filed after the database vendor restated its financial results in 1997, reducing earnings and causing a stock price drop.

If the settlement is approved by a federal court, Informix will pay about $3.2 million in cash and contribute at least 9 million shares of common stock worth $91 million. The Menlo Park, Calif.-based company will also pay $13.8 million of its insurance proceeds.

Ernst & Young LLP, the firm's accountant at the time of the earnings restatement and another defendant in the lawsuits, will pay $34 million in cash, according to the statement.

Informix Responds

Bob Finocchio, chairman and CEO of Informix, said the settlement admits no wrongdoing. "It eliminates the ongoing cost of litigation, the risk of litigation, the cloud over the company and the distraction to a lot of people," Finocchio said.

In November 1997, Informix said accounting errors forced it to restate its earnings for quarters between January 1994 and June 1997.

Revenue dipped by $278 million, and net income fell $236 million.

Informix said it continues to cooperate with a separate U.S. Securities and Exchange Commission investigation, begun after Informix disclosed the irregularities early in 1997.

Mills writes for the IDG News Service.

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MARYFRAN JOHNSON

Middleware mania

I HAVE MIDDLEWARE on my mind this week, and I'm here to tell you that's one painful state of affairs for a nontechie. Having immersed myself in a day's worth of high-level, heavy-duty middleware talk at a Gartner Group conference in the California desert (palm trees and golf courses having a 0.9 probability of easing the mental agonies of middleware), I thought I'd come away with a clue or two about this stuff (alas, a 0.2 probability).

What I did figure out is that middleware has become the minivan of software technology: It's boring, expensive and, depending on your circumstances, probably just what you need.

It's even a bit passé to call it plain old middleware — originally defined by Gartner wonks as the system software "glue" that helps programs and databases work together on diverse systems. The latest rebirth of the term is EAI, for Enterprise Application Integration.

Maryfran Johnson is executive editor of *Computerworld*. You can contact her at maryfran_johnson@computerworld.com.

Indeed, middleware in the age of the Internet and e-commerce has morphed and mutated into a staggering array of products and vendors. Gartner analysts are officially tracking 10 messaging middleware products, 30 platform middleware products, 34 integration brokers and 16 "extraction, transport and transformation tools."

There's communication middleware and platform middleware and data management middleware and integration middleware. There's portal middleware and Web middleware, too. By 2001, the conference attendees were told, nearly 80% of application development organizations will have several mission-critical applications extended to the Web, enabled by (you guessed it) middleware.

Clearly, this dire situation calls for IT leadership. You must act immediately to hide the mind-numbing complexity of middleware — perhaps even the very existence of it — from your business users and nontechnical project managers. It will only upset and confuse them.

One IT director told me about a call he recently received from a business executive at his company. "He asked me what middleware was, and I was totally at a loss about how to explain it to him," the IT guy acknowledged. "I said, 'Let me get back to you on that.' " He was last seen hightailing it out of the parking lot. I'd give it a 0.8 probability that he was driving a minivan.

DAN GILLMOR

The Microsoft trial still matters

BARRING A LAST-MINUTE settlement, the Microsoft antitrust trial resumes in Washington this week. It's no less important now than it was a year ago, when the U.S. Justice Department, 20 states and the District of Columbia filed charges.

For IT, just as much as for average consumers, this case is about choice. It's about your ability to pick products based on their quality and price as opposed to having a monopoly ram its products down your throat at a price it chooses.

A reminder of Microsoft's power to leverage its operating-system dominance came a few days ago. A research firm asserted that the Internet browser market has tipped from Netscape Navigator to Microsoft's Internet Explorer.

Dan Gillmor is technology columnist at the *San Jose Mercury News*. Contact him at dgillmor@sjmercury.com.

I recognize that for many IT people, Microsoft's bundling of applications is a solution, not a problem. On some levels it simplifies life.

But IT should remember that this kind of thing isn't cost-free.

Microsoft has kept the price of Windows high while virtually every other component of the PC has gotten drastically cheaper.

Even as the government antitrust case resumes, keep an eye on a separate case in Utah. Caldera, which owns DR DOS, once a competing product to Microsoft's MS-DOS, will be telling a court how it believes Microsoft used a variety of unfair business tactics to squeeze DR DOS out of the marketplace. The case has received much less publicity than the Washington antitrust matter, but it could have considerable impact.

At least there's still competition in the market for server operating systems, where Microsoft would like to achieve with Windows NT what it has achieved on the desktop. The emergence of GNU/Linux, better known as plain Linux, is a gratifying but still uncertain bit of progress.

But Microsoft has been dipping into its cash horde of more than $20 billion (and growing) to buy into a variety of companies that can offer access to TV set-top boxes and other emerging Internet appliances. If the company succeeds in controlling the front door to the next generation of computing appliances, its desktop computer dominance could look puny by comparison.

The antitrust trial has had some positive, if temporary, impact.

Microsoft has been forced to treat some of its customers better. But if it wins this case, the company will surely return to its standard approach of telling customers what's good for them.

One valuable outcome from the trial would be a judicial finding of monopoly. It would at long last force Microsoft to behave more fairly or face a raft of civil antitrust cases.

However this saga turns out, though, it's still a vital matter for the community. For IT, the stakes are higher than ever. ▶

DAVID MOSCHELLA

Web services lead the way for IT

THIS ONE'S for my skeptics. Lately, I have written several columns predicting that corporations will increasingly adopt network services as an alternative to their traditional systems and packaged applications, and that this will have profound implications for the careers of IT professionals [CW, April 26 and May 17]. Several readers have expressed doubts about what they think sounds like just another example of a consultant's paradigm-speak; others have simply said, "Show me." OK, let me try.

One of the reasons corporate computing people sometimes don't see Internet trends coming is that there is a strong tendency to assume that enterprise computing represents the leading edge of IT activity. Although in the past that has often been true, on the Internet it will rarely be the case. This is especially so with Web-based IT services. Here, consumer computing is the harbinger of things to come.

DAVID MOSCHELLA is an author, independent consultant and weekly columnist for *Computerworld*. Contact him at [illegible]

Before the Internet, the consumer IT market was largely defined by hardware products such as PCs, printers and removable storage drives as well as software packages for word processing, spreadsheets, graphics and databases. Today, those products clearly take a distant backseat to the online services of AOL, Yahoo, Amazon, Charles Schwab, eBay and many thousands of others. Increasingly, these are the brands with which consumers most closely identify.

More broadly, PC hardware companies used to worry about how to stimulate more consumer demand. But like television, telephone and radio manufacturers before them, they don't have to do this any more. Demand creation no longer comes primarily from new hardware and software features; consumers buy PCs to access the Web's ever-increasing array of services. Hardware is mostly a means to an end; sometimes it's even given away.

Do you know of any good reasons why business computing won't eventually follow the same basic pattern? Today, it's certainly true that enterprise computing is still dominated by hardware and software products — servers, messaging, databases, routers and so on. Clearly, that won't change overnight. Yet, despite this strong product orientation, the signs of change are already evident.

Not surprisingly, new styles of computing usually show up first in new companies and new applications. Today's pure Web businesses often have entirely different attitudes toward outsourcing than many more established firms. Indeed, they usually have little choice but to recognize that it doesn't make sense for every aspiring Web enterprise to build and maintain its own set of around-the-clock e-commerce capabilities.

The current boom in Web hosting services is really just the early evidence that many Fortune 1,000-class firms are reaching the same conclusions. When those companies decide to integrate their voice and e-mail systems, many will be happy to outsource to a unified messaging service provider.

Ditto for wireless systems and applications, data warehousing, direct marketing initiatives, virtual private networks and so on. Eventually, even legacy applications should follow.

A decade ago, people talked about a services-driven economy in terms of fast food, day care and consultants. The Web is proving this to be an embarrassingly limited vision.

It's easy to dismiss all of this as "the return of time-sharing" or some such pejorative term. But that surely misses the point. In the 1970s, time-sharing was about accessing expensive computer hardware. Today's Web-enabled outsourcing is about leveraging core competencies, keeping up with the furious rate of Internet innovation and finding one's own place in the e-commerce value chain of the 21st century. Those are transformations that will affect almost everyone's job, IT professionals included. ▶

READERS' LETTERS

Technology wasn't the problem at Levi's

I WAS DELIGHTED to read Bill Laberis' column ["Levi's Shows IT May Not Be Driver It Pretends to Be," CW, April 12] because it was the first to get the story at Levi Strauss & Co. exactly right.

I was a project manager and systems designer in Levi's IS department for 17 years and worked on many of its systems.

In contrast to some of the comments I have read recently in articles published elsewhere, it was not the lack of systems technology that led to the company's recent problems, but an inability or unwillingness to look at the data and take action.

There also was a paradox in the culture that I believe hurt Levi's badly. There was a continuous quest for the "silver-bullet" system, and this quest led to several world-class systems.

However, this same quest caused a lack of focus on effective use of any technology already in place, regardless of system age, in the endless search for a better technological solution.

Andy Oppel
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Some 'innovations' are new only to IT

DATA visualization may be big news to the commercial IT community ["Data Visualization Tools: Cool, Yes, but ROI Questioned," CW, April 26], and it will probably spawn a new wave of consultants.

However, engineers and scientists have been gaining insight into complex designs and operating phenomena for more than 15 years by selectively and productively visualizing vast quantities of data.

This is just another in a long line of examples of how innovations in IT are most often driven by engineers and then, when the costs are driven down, it spreads through commercial IT applications.

Ronald J. Bienkowski
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Change the world or change yourself?

I JUST FINISHED reading Fran Quittel's comments to "Not Over The Hill" [Dear Career Adviser, CW, May 3]. I am appalled at her cavalier attitude and acceptance of age discrimination.

Ms. Quittel has probably benefited from the end of another type of discrimination — sex bias. When women were being discriminated against, would she have accepted advice such as "Dye your hair, chuck your suits and learn to say 'You go, girl' "?

Until companies stop this blatant age discrimination, we will never conquer the labor "shortage." As for Ms. Quittel — shame on you!

Edward Fultz
Littleton, Mass

Semantics poke hole in reporter's analogy

IN "YENTA Matches Users With Same Interests" [CW, April 19], Ann Harrison defines the product's name as Yiddish for matchmaker. Wrong! To quote the Random House Webster's English Dictionary: yen-ta (yen'tuh) Slang 1. a gossipy woman; busybody.

Ms. Harrison may have been misled by the fact that Yenta is the name of the matchmaker in Fiddler on the Roof. That Yenta was indeed very gossipy!

Romy Leibler
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COMPUTERWORLD welcomes comments from its readers. Letters shouldn't exceed 200 words and should be addressed to Allan E. Alter, Columns Editor, Computerworld, PO Box 9171, 500 Old Connecticut Path, Framingham, Mass. 01701. Fax: (508) 875-8931; Internet: letters@computerworld.com. Include an address and phone number for immediate verification.

RUSSELL KAY

What's my line? Think of it as evolution in action

I RECENTLY HEARD a radio broadcaster mention IT, and that got me thinking about what we call ourselves in the IT business.

It started very simply: one man, one machine, plus helpers to replace burned-out vacuum tubes. Thus, the first **Computer Manager**.

Add a second or third machine in one location, and we need a **Computer Center Manager**.

But someone must direct software development as well as daily machine operations, procedures and policies: Enter the **Computer Systems Manager**.

RUSSELL KAY, Computerworld's product reviewer, has been observing the effects of computer technology for 25 years. Contact him at russell_kay@computerworld.com.

Machines and systems are just a means to an end — the collection of data. We're running something more important than computers. We need a **Data Center Manager**.

We're expanding our power base, but someone notices that data is useless until we do something with it. No problem. We upgrade the job to **Data Processing Manager**.

Time marches on. To distinguish ourselves from the accountants and make our job seem more modern and less comprehensible, we add another buzzword. Now we're the **Electronic Data Processing Manager**.

But people catch on, so we up the ante. We flood our customers with masses of numbers and foot-thick printouts until they can't cope. Then we let on that we can help them extract meaning from that data glut. Now we're the **Information Processing Manager**.

The machines get faster and, even in digested, "informational" form, we're overwhelming users again. To organize this information, we introduce new procedures, policies and plans. And a new title: **Information Systems Manager**.

Unfortunately, the systems idea doesn't go far enough: too many computers lie outside our control. We need a charter that encompasses any information process anywhere (and one that implies we know what we're doing!): **Information Technology Manager**.

History is clear: nothing stands still. To survive, we must keep moving away from the specific to ever-greater levels of abstraction. Thus, we might see the following job titles:

As the impact of IT gets overused and pigeonholed, we need to make it fuzzier, implying much while specifying little. Let's welcome the **Conceptual Technologies Manager**.

As organizations change, it's inevitable that technology will fall into disfavor. We'll revisit the data-to-information transformation and extend it to the next logical step, proclaiming ourselves the **Knowledge Processing Manager**.

We've come far up the scale of corporate civilization, but we need to move beyond knowledge. We need to become the **Wisdom Processing Manager**. (And we'll just ignore those who refer to us as Chief Wise Guy.)

Then the unthinkable happens. The chief financial officer says no to one of our requests, and we are toppled. Our only recourse is to move to another organization, declare a yet-higher level of abstracted corporate metaconcern and become **Cognitive Implementation Coordinator**.

From here, there are just two more steps to cybernautical management nirvana. We've run out of standard job titles and must dip into history to create a moniker that truly reflects our stature: **Philosopher King**.

Although the org chart says otherwise, it's soon clear that the CEO isn't really the Philosopher King's boss. To take the next and final step on the digital ladder, we finish up our career with a big bang, because there's only one job left: **God**.

ALLAN E. ALTER

IT needs a new midlife crisis

I WAS CLEANING OUT my file cabinet the other day when I came across evidence of how little the IT world has changed. And it has me worried about the future of our all-too-insular world.

It was an old, Forrester Research report from October 1990 titled "MIS's Mid-Life Crisis." I blew off a decade of dust, turned to the first page and started to read the summary. Here are the highlights: I'm sure you've heard this stuff over and over for years, just like I have.

ALLAN E. ALTER is Computerworld's columns editor and department editor, managing. Contact him at allan_alter@computerworld.com.

- MIS is changing.
- Business pressures drive new thinking.
- MIS is being asked to do more.
- To meet demands it is delegating power.
- Outsourcing is now an option.
- "Downsourcing" [to line IT functions] is also gaining favor.
- Triad [of outsource providers and line MIS] to run IS management.
- New organization will improve MIS morale.
- Business manager to head [central systems organization.]

Of course, there are things Forrester missed — no mention of the Internet or of mixed IT/business groups that have popped up to manage supply chains. And improved MIS morale? Pardon me while I snicker.

But overall, it's uncanny how little has changed: That summary could have been written yesterday by just about any consulting organization I know. The list is as familiar as my computer keyboard.

What does it mean?

I'm tempted to say the "crisis" in IT wasn't a crisis at all, but simply the nature of life in the IT world — if not the business world. Companies try endlessly to get the balance right between the advantages of centralization and decentralization. Outsourcing is a universal phenomenon. Businesses always demand new thinking and higher productivity from their workforce. If that sounds old, well, why should it be new? That's just how life is.

It's tempting, but I don't quite buy it. Something's wrong when IT's chattering classes keep chewing over the same old issues and problems, year in and year out. It's downright dispiriting that all the elements of this "crisis" from 1990 are still sloshing about today.

Perhaps our problem is that we're not creating enough new problems? That we're missing alternative ways to manage technology and technology organizations? That we're stuck in a rut of stale old debates? Missing out on the what-could-be's by always thinking about the same what-should-be's?

Allow me to throw some spaghetti at the wall:

How can knowledgeable users help us do a better job of running corporate technology? A new generation — a hackneyed phrase, but true in this case — of young workers attuned to computers is entering the workforce. How can they change the way IT runs?

How can several companies pool and share IT resources? We recently wrote about how Home Depot and Columbia Energy teamed up to develop new project management software [CW, March 1]. Are there economies of scale that companies in the same region, city or industry can apply to IT management?

How can the forces of standardization (on TCP/IP-based networking or dominant products like Microsoft Office or the PalmPilot) and ubiquity (as personal digital assistants become more commonplace) be used to simplify the management and deployment of IT?

Please, I'm not declaring some bold new direction or paradigm shift here. I'm just saying things have changed enormously in the past decade and that should allow us to take this 10-year-plus discussion in very different directions. And given that CEOs are demanding more from IT and are, as always, less than perfectly satisfied with how well we deliver, we need new ideas and debates. Better that we put on our out-of-the-box thinking caps than leave it to the next whiz kid consultant with a business bestseller.

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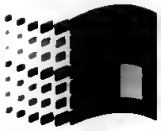

WINDOWS® 20

Microsoft Windows NT Workstation 4.0 is now available with Service Pack 4, which includes Y2K and Euro updates. For Year 2000 information regarding Microsoft products see www.microsoft.com/year2000/

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BUSINESS

CEOs: NET GIVES IT A BIGGER ROLE

The Internet is changing the business world, according to a survey of CEOs, who say they expect it to remake everything from working hours to the way corporations relate to suppliers. It turns out IT is a more than just number crunching. ▸ 38

YOU GET WHAT YOU PAY FOR

Outsourcing is more expensive and less flexible than it's supposed to be, charges N. Dean Meyer. So why is it on the rise? Executives aren't happy with the IT support they get in-house, so they're willing to spend more for a change. ▸ 43

I THINK WE NEED TO TALK . . .

Companies that outsource part of IT have to tell employees sometime. But when? If you talk too early, you face defections. Talk too late, and the rumor mill will create doomsday scenarios. Few companies agree on when it's best to fess up. ▸ 41

PENTAGON FACES Y2K ISSUES

The Department of Defense has identified about 2,000 suppliers that could stop the war machine with potential Y2K failures. Most are doing OK, though auditors are double-checking their work just to be sure they didn't miss anything. ▸ 39

DO YOU NEED THE PC POLICE?

Managers at a Ford stamping plant were worried about users modifying PCs with offensive images or unstable software — until a PC management app helped them lock down configurations. ▸ 42

WEB-CREDIBLE

A consultant without a Web site may be the least credible thing in IT. But how to build an effective one? Use it to frame the kind of work you do and to prepare clients and potential clients for in-person contact. ▸ 52

DEVELOPING E-COMMUNITY

Need a place to swap tips, complain or learn about local gatherings of the like-minded? We review sites designed to build communities among IT folk — in person and online. ▸ 50

SHARPEN THOSE SKILLS

What skills does an Oracle specialist need in a world increasingly focused on ERP? Fran Quittel advises learning Web-savvy languages and formats to ride the trend toward app service outsourcing. ▸ 54

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KIRK RUTHENBERG, an attorney at Sonnenschein, Nath & Rosenthal, helped [illegible] create Y2K scenarios that demonstrate how to avoid legal land mines

READY FOR A Y2K GRILLING?

WHAT COMES AFTER Jan. 1, 2000? Lawsuits. Lots of them. How exposed are you? What . . . um . . . awkward questions will lawyers press you on in court? Do you have answers? With advice from Y2K lawyers, we map out five common scenarios to see what could happen, what you could do to prevent disasters and how to respond to those pointed questions after swearing to tell "the truth, and nothing but the truth."

44

NET SPINS CHANGE IN BUSINESS WORLD

CEOs foresee continuous work hours and reshaped global markets

BY JULIA KING

THE INTERNET will revolutionize how where and when large companies operate on a new global playing field now under construction online.

That's the main conclusion of a new worldwide survey of 525 CEOs and other senior executives jointly conducted by Booz Allen & Hamilton Inc. and *The Economist* Intelligence Unit in New York.

Some of the key findings include the following:

- 49% of executives believe the Internet will reshape the international marketplace within the next three years.
- 54% believe the balance of power will shift from sellers to buyers.
- Nine out of 10 said they expect a radical change in corporate culture by 2001: 9-to-5 working hours will go the way of the corner office and mahogany credenza as employees work from home, hotels, just about anywhere and at all hours, as companies operate around the clock. Also, face-to-face meetings will drop significantly and command-and-control, hierarchical corporations will become obsolete.
- 84% of companies will have intranets by 2001.
- 61% will have extranets to link with customers, suppliers and shareholders.

> Corporations around the world are in a love affair with the Internet.
>
> LOU CELI, MANAGING DIRECTOR, *THE ECONOMIST*

"Corporations around the world are in a love affair with the Interoet," said Lou Celi, managing director at *The Economist*.

"Right oow, most companies have simple Web sites with general information and some customer service," he noted.

But in the near future, most executives interviewed expect to transition their brick-and-mortar businesses to an around-the-clock electronic infrastructure that may, among other things, accelerate the pace of market globalization.

Executives said their companies will also partner more frequently with other companies to get new products to customers more quickly. They expect a rise in the use of back-end logistics and freight carriers as companies sell more goods online, which tbeo must be transported to buyers.

The study found that those alliances will be frequeot and short-lived, with multiple pattners. That prompted one senior executive to refer to tbe new electronic marketplace as the "Woodstock Market."

"It's all about extended enterprises, linkages and virtual organizations," Celi said.

For now, cutting costs is what's driving most Internet initiatives, the study found. By 2001, however, executives said they expect to shift that focus to more revenue-generating activities.

Another key finding: Internet initiatives at companies are being funded outside of information technology.

"Companies are changing the way they go about making loteroet iovestment decisions," said Charles Callahan, a vice president at Booz Alleo & Hamilton. "Companies are realizing they're not just building IT, but the ability to be competitive," he said.

Improved communication	74%
Enhanced customer service	70%
Improved knowledge sharing	58%
Reduced costs	54%
New markets	48%
Increased revenue	39%

SOURCE: BOOZ ALLEN & HAMILTON AND THE ECONOMIST INTELLIGENCE UNIT, NEW YORK

SNAPSHOT

World Wide Wait

The average time, in seconds, to download a home page from one of 40 business-related Web sites during business hours for the week of May 17:

Top 5 Best-Performing Web sites	
Yahoo	3.06
Microsoft	3.1
Apple	3.45
Federal Express	3.64
Merrill Lynch	3.64

Best Areas to Web Surf	
Detroit	4.52
Minneapolis	4.80
Atlanta	4.89

Worst Areas to Web Surf	
St. Louis	14.63
Tampa, Fla.	12.02
Omaha	11.10

SOURCE: KEYNOTE SYSTEMS INC. (SAN MATEO, CALIF.)

Health Will Dwarf Finance, Travel Online

But regulators must first resolve how to license pharmacists

BY STACY COLLETT

The health care industry is being touted as the next big thing on the Internet. But unlike the online finance and travel industry boom before it, tbe health industry faces many legal and regulatory hurdles in doing business across state lines and, in many cases, without a physician's involvement. Once those issues have been resolved, industry observers said, health care will dominate other online sectors.

The market for vitamins, prescription drugs and over-the-counter herbs and medicines reached $140 billion last year and has grown at double-digit rates annually during the past several years, according to Gartner Group Inc. That doesn't even include the market for online health information.

Room to Grow

"When we're looking at the other markets, they're just dwarfed by the potential of this health care market," said Carol Ferrara, a Gartner analyst io San Jose, Calif. Also, most people who use the Net are the same ones the health industry is targeting — consumers, especially baby boomers, who want to take control of their health care by comparing products and information.

Technology companies and health care leaders see the industry's Web poteotial. Earlier this month, Healtheon Corp. and WebMD Inc. announced a $5.5 billion merger, creating a Web-based health care information powerhouse backed by Microsoft Corp., Excite Inc. and Intel Corp. Separately, CVS Corp. purchased online drug seller Soma.com in a $30 millioo deal to expedite its online presence. And drug maker Glaxo Wellcome Inc. announced an alliance with iVillage.com to sponsor health care information and promote its drugs.

But before the health industry reaches its potential, it has to deal with federal and regulatory issues. Federal regulators must address how to license pharmacists to distribute drugs and dispense advice across many states.

Federal laws must combat the illegal distribution of drugs through online sites. Insurance providers have to be confident in the regulations to be able to work with online retailers.

Chris Pavlic, an analyst at Aberdeen Group Inc. in Boston, said regulatory issues may slow the pace of online health sites, but it's a necessary step. "If you are going to truly, effectively manage sensitive health care issues online, you need those types of protocols in place."

Lawyers at the Pharmaceutical Research and Manufacturers of America Foundation in Washington are documenting abuses by online drug sellers that accept and deliver prescriptions without a doctor's approval, said Jeff Trewhitt, a spokesman for the group. He said the group will complete a position paper on online drug selling this summer, but Trewhitt didn't know whether it will lead to a push for new regulations.

The Market for Health Products, 1998

Drugs and pharmaceuticals	[redacted]
Over-the-counter medications	[redacted] $30B
Vitamins, minerals and herbs	[redacted] $10B

SOURCE: GARTNER GROUP INC., STAMFORD, CONN.

BRIEFS

Botswana Year 2000 Laggards Face Fines

The Botswana parliament is considering a bill that would impose a fine of about $55,000 on any vendor whose products aren't year 2000-compliant. Fines could also be levied on companies that don't conduct an inventory of their equipment with embedded chips and submit it to the National Y2K Forum by July 7. Officials are expected to discuss the bill in the June parliamentary session.

Car Questions Top Year 2000 List

Users visiting an online database of Y2K-compliance information for consumers most often sought information about cars, yet only 17% of auto manufacturers provide such information on their Web sites, according to Y2Kbase.com in San Francisco. Meanwhile, computer hardware and software terms were in 32 of the top 50 terms plugged in to the site's search engine.

Keystone Names Y2K Spokesperson

Keystone Financial Inc. in Harrisburg, Pa., has appointed a corporate spokeswoman for year 2000 issues. Kathleen Campbell, also a product manager, will handle inquiries, speak to community groups and participate in public forums.

Get the Message

Which messaging systems in your organization could have the most serious year 2000 problem?

Lotus cc:Mail	25%
Microsoft Mail	20%
Windows NT/Exchange	15%
Voice messaging	10%
Lotus Notes	10%
Other	45%

Base: Executives at 39 Fortune 500 companies; multiple responses allowed

SOURCE: CREATIVE INFORMATION, INC., PALO ALTO, CALIF.

SUPPLIER PROBLEMS THREATEN PENTAGON

Defense Department sees 10% of weapons, parts providers facing compliance snags

BY PATRICK THIBODEAU
WASHINGTON

The U.S. Department of Defense, which manages one of the world's largest supply chains, estimates that 10% of its most critical suppliers face potential year 2000 problems.

A failure in that supply chain could hurt the nation's military readiness. The DOD's critical suppliers make specialized equipment and parts for aerospace and electronics used in war fighting.

"Anything that would interrupt the logistics of the supply pipeline in terms of critical parts of any kind of weapons system or computer system that we need for operating purposes . . . would obviously have an immediate readiness impact," said Robert Lieberman, the DOD assistant inspector general for auditing.

DOD officials are trying to avoid trouble. Contingency strategies for those companies most at risk for Y2K-related production failures are being considered. These include advance ordering this year of all the supplies the DOD may need from these vendors next year and providing financial or technical support in repairing the suppliers' Y2K problem, a DOD official said.

For year 2000 purposes, the DOD is focusing on 2,075 companies it considers its most critical suppliers. Most are electronics or aerospace vendors, and some are sole-source suppliers. Of that number, only about 20 firms are at "high risk" of a Y2K problem, and another 200 at "moderate risk," said Mike Williams, information technology officer at the Defense Contract Management Command, a DOD contract management agency. He said he believes that "the industry is in pretty good shape."

DID YOU KNOW?

Pentagon Supply Chain

- Defense agencies have about **325,000** contracts with **23,000** contractors for goods and services. Of those, **2,075** were identified as critical vendors under the DOD's year 2000 program.

The companies at high risk of a Y2K failure may be far behind on their remediation work, suffering cost overruns or facing financial instability. Moderate-risk companies also have problems, such as remediation and testing schedules that aren't completed until year's end.

Others aren't so sure the DOD has correctly identified its most critical suppliers out of the 23,000 companies with which it does business. The most critical suppliers are those for which there is no substitute — such as for a key part used in a weapons system.

"I would not want to bet my lunch that every critical supplier is on that list," Lieberman said. The inspector general will review the Defense Contract Management Command's results.

Last fall, defense agencies identified 5,100 companies as "critical" suppliers. But that number was reduced to 2,075 after respective armed services examined their most important suppliers. However, Lieberman said the process of picking critical suppliers involved some guesswork. "Hopefully, we made the right choices," he said.

Sun Offers Y2K Warranty for Products

Policy stronger than what other vendors offer

BY JAIKUMAR VIJAYAN AND STACY COLLETT

Sun Microsystems Inc. has announced one of the strongest year 2000 warranties covering hardware and software available from a systems vendor.

Under the policy, Sun will repair a product for free, replace it with equivalent equipment or refund its book value if any product certified by the company as Y2K-compliant isn't. It applies to products purchased on or after Jan. 1, 1995.

ANALYST EDWARD YOURDON: Risk to Sun probably minimal

Sun's move is broader in scope compared with other hardware vendors, said Tom Oleson, an analyst at International Data Corp. in Framingham, Mass. That's partly because Sun's program includes customers who may not have warranty or service agreements with Sun or its partners.

Vendors such as IBM, Hewlett-Packard Co. and Compaq Computer Corp. have programs to help customers identify and fix noncompliant products. But those companies handle Y2K problems under standard warranties, which say they will repair, replace or provide refunds for any defective systems. However, the customer must have a warranty already in place.

The problem is that not all products purchased four years ago will still be under warranty. "I think it's terrific for Sun to step out and put their money on the line," said Edward Yourdon, director of Y2K advisory services at Cutter Consortium in Arlington, Mass., and a *Computerworld* columnist. "On the other hand, I doubt very much they're exposing themselves to much risk, because their lawyers aren't stupid."

Part of Sun's confidence may stem from the fact that hardware and system-level software poses a smaller risk — and is relatively easier to fix via free patches and BIOS upgrades — than application software, Oleson said.

The year 2000-compliance status of Sun's products is listed at *www.sun.com/y2000/cpst.html*.

SNAPSHOT

Competitor Comparison Update

As their merger continues, here's a second look at Exxon's and Mobil's year 2000 remediation efforts. Both oil giants have reduced their spending estimates.*

	EXXON	MOBIL
Fortune 500 rank	4	12
Costs through March 31	$190M	$132M
Estimated total Y2K costs	$225M-$250M	$185M
Estimate from Sept. 30, 1998	$250M-$275M	$200M
Notes	Contingency plans expected to be done by midyear	Repairs, upgrades and replacements in North American operations expected to be done by June 30

* First appeared in the Jan. 11, 1999 issue of *Computerworld*

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BREAKING NEWS ABOUT OUTSOURCING IS TRICKY

Experts advocate waiting until at least some details are available

BY BARB COLE-GOMOLSKI
SAN DIEGO

WHEN should companies that are considering outsourcing as part of their information technology operation tell their current IT staff? That question, raised here earlier this month at the DCI Outsourcing Conference, drew mixed opinions.

Talking early is likely to spur staffers to leave, or at least update their résumés. Keeping quiet often generates swirling rumors, an exodus of staffers and bad will.

"It's one of those damned-if-you-do, damned-if-you-don't situations," said Gary Cluff, a senior adviser to the Employee Management Association in Alexandria, Va. Today, most companies are probably going to try to keep news of an outsourcing deal quiet until they have something substantive to talk about, Cluff said. "If a company is just starting to consider outsourcing, it's too soon to tell," he said. "If you can't give employees the details, you're dooming the organizatioo to heavy turnover."

Jackie Crow, manager of IT client services at Union Gas in Chatham, Ontario, is in the tell-up-front camp. As soon as the utility learned that its infrastructure services were to he outsourced, it informed the 75 employees who could be affected. "We figured that rumors would get out, and those rumors would he far worse than the truth," Crow said.

Ron Gallagher, president of Oust Consulting Inc. in Paradise Valley, Ariz., said he tells his clients to be up front about outsourcing once "you have gotten to the point of seriously looking." He recommends telling not only the IT staff who might he affected, but also line-of-business managers and end users. "Hiding the truth can only hurt the relationship between the employees and the company," Gallagher said.

In Hindsight

Vicky Nicodemus, a programmer/analyst at Salt River Project (SRP), a water and power company in Phoenix that signed a mainframe maintenance outsourcing agreement in December, agreed. "We didn't do it that way, and there were rumors," Nicodemus said. She said she now believes that "as soon as we started shopping for vendors, we should have told. If we had dooe that, we could have gotten [IT staffers'] help [in negotiating the agreement]." SRP's contracts were signed without service-level agreements, and the company is now trying to reoegotiate that.

Bill Stapleton, CIO at Handleman Co., a Troy, Mich., distribution firm that signed a big outsourcing contract four years ago, acknowledged that his preference would he "to keep [a deal] onder the covers as much as I could." Stapleton wasn't the CIO when Handlemao struck its deal. He conceded that keeping the secret is tough because, as the deal is being negotiated, staff should be involved in negotiating service-level agreements.

To Tell or Not to Tell?

Pros and cons of making your outsourcing plans widely known to your IT staff

PROS:

- Putting out information is better than letting rumors grow
- Lets you involve IT staffers in outsourcing negotiations

CONS:

- May result in lower morale of those staffers who stay
- Can spur staff to leave

Packaged Apps Let Health Care Industry Network Over Web

Greater efficiency, cost control main goals

BY BARB COLE-GOMOLSKI

Packaged applications are emerging to help health care companies link payers, providers, suppliers and patients via the Internet.

Many health care companies are already part of an integrated data network (see graphic), which means they share information with providers and suppliers via their corporate network. Increasingly, however, the goal is to do that via the Internet.

Webified Systems

Software vendors are responding with Web-enabled versions of their medical information systems. For example, Shared Medical Systems Inc. (SMS) in Malvern, Pa., recently shipped Net Access for Invision 23, software that allows physicians to access elinical information stored in SMS's repository over the Web.

Confer Software Inc. in Redwood City, Calif., earlier this month shipped the ConferWeb platform and one of the applications in a Web-based suite that automates paper-intensive business processes at health care companies.

"Right now, most health care companies are looking to leverage their business relationships in order to control costs," said Robert Connely, a vice presideot at McKesson HBOC, a health care information technology software and services company in Atlanta.

GNA, a rehabilitation services company in Grand Haven, Mich., used ConferWeb to build a clinical documentation system, which is now up and running at 40 of its client sites.

Prior to installing the application, therapists spent 25% to 40% of their time documenting their cases by hand or using word processors. Using the clinical documentatioo system, GNA has reduced documentation time by about 50%, according to Bob Wiersma, executive vice president. "That's time that elinicians cao he filling up with chargeable activity," he said.

GNA didn't install the application at client sites, but it offered guidance and training to clieots, Wiersma said.

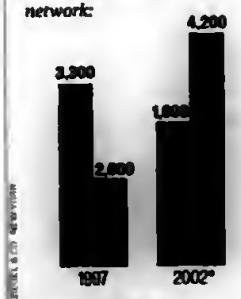
In addition to freeing up elinicians' time, such applications eliminated the need for GNA to communicate with disparate systems that might he on-site at the 250 facilities it serves.

But though using the Web to share medical information promises to improve efficiency, it's not a panacea. "When you write an application to run on a browser, you lose a lot of features," said Anna DuPen, president of DuPen Inc., a Seattle-based pain management firm.

DuPen has developed a workflow application and tickler sheet using ConferWeb that will be used by pharmacies, nurses treating cancer and AIDS patients in outpatient facilities, and those offering at-home care. When drug regimen changes are put into the system, they will automatically get routed to the pharmacy. "If we can get [these users] oo the same page, we have the opportunity to improve outcomes," DuPen said.

Fewer Hospitals Stand Alone

Number of hospitals that run IT independently, vs. the number that are part of an integrated data network:



Disaster Plans: Blueprints for Terrorists?

BY TOM DIEDERICH

A bill currently before the House Commerce Subcommittee on Health and Environment raises the question of whether information designed to protect the neighbors of chemical plants might actually hurt them.

The bill, introduced by Commerce Committee Chairman Thomas J. Bliley (R-Va.), would make it illegal to post online the so-called "worst-case scenarios" the plants must create to help plan for disasters. Bliley said he fears the scenarios could be blueprints for terrorists.

Bliley has said the information should be available to those living near the plants, but not posted on the Web.

Chemical plants have until June 21 to submit their worst-case scenarios to the U.S. Environmental Protection Agency.

But Ari Schwartz, policy analyst at the Center for Democracy and Technology in Washington, said posting the information on a secure Web site made more sense than banning its online publication.

"If the information is a risk, we should either be classifying the information or making sure that it's less of a risk by protecting the actual physical plants," Schwartz said.

Ford Uses Tool to Steer Clear of Offensive Desktop Displays

BY MATT HAMBLEN

Fred Swope, controller at a Ford Motor Co. stamping plant, was concerned about workers posting offensive material on desktop PCs scattered throughout the 2.8 million-square-foot facility.

"We were really worried about . . . access to inappropriate [Internet] sites or even posting inappropriate screen savers on the floor on a corporate PC that was visible by other people," said Swope, who works at the stamping plant, in Woodhaven, Mich.

He learned of WinVista Pro, software from WinVista Corp. in Boca Raton, Fla., that monitors and restricts some desktop functions. Loading the software would prevent Ford from having to replace its PCs with thin clients or dumb terminals that don't have such access.

Eight months ago, Swope directed Kasey Kasemodel, a Ford computer manager, to build a Ford application using WinVista Pro. Kasemodel and WinVista staff created a new Windows interface that looks different and limits actions. They loaded it on 45 PCs two months ago.

Don't Go There

If a user tries to customize the machine or make unauthorized moves, WinVista Pro instantly tells the user the activity isn't allowed and prevents further moves.

Areas prohibited include access to games and Regedit, a site that allows access to all the applications on the hard drive of a Windows machine.

"Mainly, we were concerned somebody might modify a screen saver and cause a problem that causes downtime — something we don't want," Kasemodel said.

Before the change, some users had modified their screen savers to include messages such as "sex, drugs and rock 'n' roll" in large script, but Kasemodel said the biggest problem was users who deleted icons, an action that required a service call to rectify.

The software may be installed on as many as 400 PCs in the plant and on PCs in other Ford plants, Kasemodel said. Ford purchased 100 licenses from WinVista for $108 per license.

Norbert Kriebel, an analyst at Giga Information Group Inc. in Cambridge, Mass., said WinVista provides desktop lockdown functions in a unique way, although it competes with several larger desktop management companies such as Network Associates Inc. in Santa Clara, Calif., and Computer Associates International Inc. in Islandia, N.Y.

However, Kriebel described the market for lockdown software as small and getting smaller in coming years as fewer people install applications that need a lockdown.

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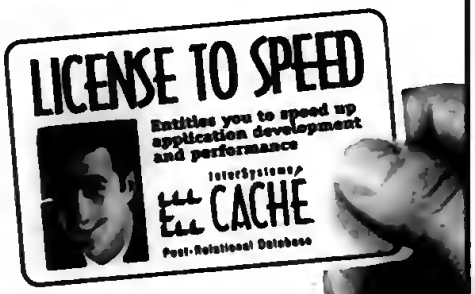

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BRIEFS

Site Speeds Download Times

Internet portal Go Network *(www.go.com)* spruced up its home page last week to make download times 30% faster and to improve personalization features. The site, which is run by Infoseek Corp., replaced myriad images on the home page with one image and cut the amount of HTML used on the page by 50%, said Patrick Naughton, an Infoseek executive.

U.K. Users Log On

More than 3 million users have gone online during the past five months in the U.K. because of the increasing number of Internet service providers with no monthly charges, according to a report released last week at Internet World U.K. in London.

Most of those providers offer a "local rate" number, which results in users paying only for the price of a local phone call - 1 pence (1.6 U.S. cents) to 4 pence per minute - according to the study by Fletcher Research. That brings the number of users in the U.K. to 10 million, the report said.

Drug Maker Buys Ads Online

IVillage Inc. announced an advertising alliance with Glaxo Wellcome Inc. in a one-year, $1.7 million deal. Glaxo Wellcome will sponsor interactive resources at the IVillage Web site for members to develop personalized health-awareness programs.

NEW REPORTS

E-Health Care Up

The online consumer health care market is expected to hit $1.7 billion by 2003 despite regulatory hurdles and limited products and distribution, New York-based Jupiter Communications LLC said.

In "Consumer Healthcare Industry Players: Seek Rx for Online Commerce Growth," Jupiter predicts an increase in the pace at which pharmacies adopt Web strategies and further consolidation among health content and commerce sites. Online prescription spending is expected to reach $806 million by 2003. The report is available by subscription.

www.jupitercommunications.com

Computing Costs

Small firms spend a median of $730 per employee, but large firms spend $130 to set up intranets and workgroup computing, according to a report by Gartner Group Inc. in Stamford, Conn.

A summary of the study is on *www.gartnerweb.com/public/static/consulting/wicms.html.*

www.gartner.com

89%	Offer simple sites that provide general information
58%	Provide some customer service and links to customers
37%	Conduct online transactions

SOURCES: BUCK ALLEN & HAMILTON AND THE ECONOMIST INTELLIGENCE UNIT NEW YORK

N. DEAN MEYER

Look deep inside before outsourcing

A RENTAL-CAR COMPANY thought it was saving money by outsourcing its information systems. Later, it learned otherwise when its outsourcing vendor ran up a substantial development bill trying, and ultimately failing, to reinvent a commercially available yield-management system. The real cost, of course, was the missed opportunity: millions of dollars per year lost from lower returns on the entire rental fleet. Outsourcing vendors promise tantalizing benefits: reduced costs, greater accountability and flexibility, leading-edge technology and a more competent workforce. Executives, the siren song goes, will be able to "stick to their knitting" with fewer distractions.

But in fact, outsourcing turns out to be surprisingly expensive, even with the help of economies of scale. And instead of improved flexibility, executives find that renegotiating complex outsourcing contracts is much more difficult than redirecting internal staff priorities and directions. After all, does anyone really believe that wrangling with lawyers and contracts is an easier way to manage than coaching, teamwork and face-to-face performance appraisals?

If the benefits aren't real, why have so many executives replaced staff with vendors? In many cases, the real reason for outsourcing is dissatisfaction and frustration with poorly performing internal service functions. Executives want tailored services, better control over priorities, improved customer focus and better response time — and they're willing to pay a premium to get them.

If a staff function isn't working well, the right solution is to fix it.

Throwing money at a problem is shortsighted. And destroying staff careers is cruel. If a staff function isn't working well, the right solution is to fix it. Fortunately, the past 10 years have taught us how to engineer such transformations:

- When IT doesn't tailor solutions to its clients' needs, it's likely that the organizational structure lacks a client-liaison function.
- If clients feel staff priorities are arbitrary and out of their control, examine the "internal economy" — the systems of budgeting, priority-setting and pricing that should allow clients to control their spending power.
- If response time is too slow, consider the culture — the widely practiced behaviors in an organization. An entrepreneurial culture will expand supply to meet demand. A culture bound up in red tape and restraints will cap supply, rather than manage demand.
- And when the problem is a lack of customer focus, look at both organizational culture and metrics — the feedback loops that let people know how they're doing.

Of course, converting a bureaucratic staff department into a vibrant business within a business isn't easy. The devil is in the details of implementation. But the job can be done, and the huge payoff certainly justifies the effort.

This is not to say that there's no place for vendors — including service firms. Ironically, it's a customer-focused, entrepreneurial staff department that can make the best use of vendors.

Consider what's involved in managing vendors: Costs and benefits must be analyzed for each project, not at a high level or once per year. Vendors must be chosen carefully — much like a hiring decision — and managed so that they conform to internal standards of quality and integration. Vendors' knowledge should be brought in-house to avoid costly dependence on outside support.

Those requirements suggest that IT professionals are in the best position to competently manage outside IT vendors. When staff contract with outside vendors to extend their capabilities, they can make the right vendor decisions, in context, day after day.

Bottom line: Don't fall for the false promises of outsourcing. An organization gets the best of both dedicated staff and external business partners when it hires vendors through staff, rather than in place of them.

Meyer is the author of Outsourcing: How to Make Vendors Work for Your Shareholders *(NDMA Publishing, Ridgefield, Conn., 1999; www.ndma.com).*

Are you ready to defend your Y2K program in court? Here are five scenarios that may help you answer that question

By Kathleen Melymuka

"*If your board had budgeted more money for year 2000 testing, your chances for success would have been higher, correct?*"

"*Do you have any reason to believe that the business units ever looked at those contingency plans?*"

"*As CIO, you allowed almost all of the documentation of your company's Y2K efforts to be permanently erased?*"

Questions like those are year 2000 nightmares today, but tomorrow they could turn into reality as CIOs and Y2K managers find themselves defending their year 2000 programs in court.

What will year 2000 courtroom scenarios look like? In a word: trouble. "Lawyers will look for the weakest link and hammer it again and again," says Kirk Ruthenberg, an attorney at Sonnenschein Nath & Rosenthal in Washington.

That weak link can take many forms. It may be your process and quality control, a contingency plan that didn't make sense, e-mail that comes back to haunt you, a too-casual approach to testing, a limited budget, a late start or any number of seemingly trivial matters.

"The process will be looked at under a microscope," says Paul Arne, an attorney at Morris, Manning & Martin LLP in Atlanta. "Did a failure occur because the device never got on an inventory or [assessment] tools were flawed or the remediation process was wrong or the test process was not sufficient? And who said your methodology was valid?"

Even if you've done everything right, you're not in the clear unless you can show it.

"Two companies may do exactly the same types of things from a technical standpoint, and one may even be better," Ruthenberg says. "But if their plan doesn't look as professional, they're going to be in a weaker position in litigation."

Here's a look at some likely courtroom scenarios, circa 2001.

The Case: Hubris Sportswear Co. is a fictional clothing manufacturer whose primary customers are high-volume retail stores. In the early months of 2000, several unrelated Y2K glitches in the company's just-in-time inventory system resulted in a significant number of deliveries of the wrong kinds of clothes in the wrong amounts, colors, styles, fabrics and sizes. The result was millions of dollars of lost revenue and customer good will, numerous breach-of-contract claims, a drop in the value of the company's stock and, ultimately, a shareholder suit against the corporation's officers. Here are excerpts of the cross-examinations of CIO Hugh Blewitt and year 2000 project manager Noah Scape by Ivanna Winnit, counsel for the plaintiffs.

SCENARIO 1: QUALITY CONTROL

Winnit: Mr. Scape, did you think that your order-entry software package, Clothes Call, would function properly in year 2000?

Scape: Yes, we did.

Winnit: What was the basis for that conclusion?

Scape: Our vendor told us it was OK.

Winnit: In writing or verbally?

Scape: Verbally.

Winnit: Who made that statement?

Scape: I'm not sure. Somebody in the business unit wrote "Y2K OK" in our products checklist, so that meant the vendor said it was OK.

Winnit: So you did not test it?

Scape: No, we did not.

Winnit: And you did not have a contingency plan for its failure?

Scape: No. We thought it would work, so it was a lower priority.

Winnit: Did that level of due diligence suffice for all products in use at your business?

Scape: No. We fixed and tested many, many systems.

Winnit: How did you decide which systems got the attention?

Scape: It was up to each business unit to make that

LEGAL 'G

call for products they used based on the priority they assigned them.

Winnit: Did you audit the business-unit decisions?

Scape: No. We didn't have that kind of time.

SUMMARY: The project manager paints a picture of a decentralized year 2000 program lacking consistency and quality control. Hubris Sportswear would be less vulnerable if the project office had provided detailed guidelines on how to categorize products and the level of proof required for each category, then spot-audited the departments' due-diligence files.

SCENARIO 2: RESPONSE TO A WARNING

Winnit: Mr. Scape, let me read to you the first paragraph of a Jan. 26, 1999, e-mail from Mr. Will Byrne, a systems analyst at Hubris. It is addressed to you, with a copy to Mr. Blewitt: "The year 2000 testing program is not being implemented by user groups, except for inconsequential applications that require little effort. For the most part, testing standards are either unknown to the user community or are being ignored. Unless a systematic plan for enforcement and review of testing in compliance with standards is implemented immediately, Hubris Sportswear is going to find itself 'testing' mission-critical systems in production on or after the century change."

Mr. Scape, do you recall receiving this e-mail?

Scape: Yes, I do.

Winnit: Did you take any action to enforce the testing standards on or after the date of this e-mail?

Scape: No. I already told you that ours is a highly decentralized corporation with maximum independence for each business unit, and our CIO, Mr. Blewitt, gave me no authority in that area. Besides, Mr. Byrne was a noted loose cannon, always running off about the incompetence of the users, management and anyone else who wasn't a technician.

(Later in the day, CIO Blewitt is on the stand.)

Winnit: Mr. Blewitt, you learned in January 1999 that the year 2000 testing effort at Hubris Sportswear was inadequate, correct?

Blewitt: No, that's not correct.

Winnit: Would you please refer to Plaintiffs' Exhibit 368, the e-mail from Mr. Byrne to Mr. Scape, which shows that a copy was sent to you. Would it be fair to say that Mr. Byrne expressed concerns in this e-mail, which, if true, raised very serious questions about the adequacy of end-user testing?

Blewitt: Yes.

Winnit: Did you take any action personally to follow up on Mr. Byrne's concerns after you read this e-mail?

Blewitt: No. I saw that the letter had been sent to Mr. Scape, and I trusted him to address Mr. Byrne's concerns.

Winnit: Did you follow up with Mr. Scape to see if he was taking any action in response to this e-mail?

Blewitt: No.

SUMMARY: An unheeded message pointing out weaknesses in Hubris Sportswear's program can nail the company. It has to be addressed at the time and on the record. The allegations should have been investigated immediately. If disproved, there should be a letter to Byrne stating this, as well as his response agreeing that testing is proceeding as planned. If the allegations were correct, the problems should have been corrected again on the record, with Byrne attesting to his satisfaction with the correction.

SCENARIO 3: CONTINGENCY PLANNING

Winnit: Mr. Blewitt, would you agree that your contingency plan did not address the malfunction in the Clothes Call software?

Blewitt: Well, not specifically, but we worked very hard to develop plans that anticipated as many scenarios as possible, and there were some manual work-arounds to facilitate correct shipments once the problem was discovered.

Winnit: And those work-arounds fell smoothly into place?

Blewitt: Well, not as smoothly as we would have liked. They required quite a bit of tweaking by the business folks.

Winnit: In fact, isn't it true that there were several days of confusion before the staff was actually able to begin processing orders manually?

Blewitt: A few days, yes.

Continued on page 48

Lawyers will look for the weakest link and hammer it again and again.

NINN RUTNENBERG, ATTORNEY, SONNENSCHEIN NATH & ROSENTHAL, WASHINGTON

OTCHAS'

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*Collaborative Research Study John Katsaros, 1999 Based on this study "Mail Plus. The Real Issue in Comparing Lotus Notes/Domino with Microsoft Exchange" not only is the Total Cost of Ownership (TCO) of Lotus Notes/Domino and Microsoft Exchange essentially the same, but a Lotus Notes and Domino solution provides far more messaging functionality and value than Microsoft Exchange You may have found Microsoft's "99 9% reliability" claims difficult to digest. Exchange is limited to the performance and reliability of the NT platform, which has been shown to have only 97 44% availability, according to the IDG/Gartner study, October 1998. Lotus Domino runs on NT as well as platforms such as S/390 that provide 99.998% availability. Sales data based on total Notes seats according to EMMS 4Q 1998 Report.

Granted, Microsoft Exchange® can be adequate. Adequate if you've limited your choices to a single platform and you're comfortable replacing your existing mail system with just another e-mail system. More likely, you need a truly cross-platform solution that meets your real-world needs and grows as your business grows. One that gives you the option to run on many different systems – like Windows NT,® AIX,® Solaris,® AS/400,® S/390® and HP/UX® – without being dependent on a single one. One that is really scalable, highly robust and doesn't come with a host of hidden costs. One that provides integrated collaboration tools to enhance productivity and increase your responsiveness. That solution is Lotus Domino™ – the worldwide messaging leader. And the one chosen by savvy customers such as Kaiser Permanente, Herman Miller® and The California Department of Transportation. For the real story, or to get your free Lotus super.move™ Migration Evaluation Kit, visit www.lotus.com/messaging/supermove

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LEGAL 'GOTCHAS'

Continued from page 45

Winnit: Mr. Blewitt, can you describe how your company developed its year 2000 contingency plans?

Blewitt: Our company has been very attuned to disaster planning since the hurricane in 1989. Every business unit is required to have a plan. So, our year 2000 Project Team collected all of the company's existing plans, reviewed them and added a number of components that they thought were important for the year 2000 problem. They then put the enhanced plans in new, easy-to-use notebooks and sent them back to the business units.

Winnit: Did you involve the business units in the preparation of those plans?

Blewitt: No.

Winnit: Did the project team consult with individuals from the business units?

Blewitt: Well, no. The project team had the year 2000 expertise.

Winnit: Did they review those plans with the business units after they distributed them?

Blewitt: No.

Winnit: Did you or anyone else stage any contingency drills in the business units?

Blewitt: I'm not aware of any, but there might have been.

Winnit: In fact, Mr. Blewitt, do you have any reason to believe that the business units ever looked at those contingency plans at all?

Blewitt: Yes. They definitely looked at them after the failure.

Winnit: After the failure . . . And what was their response then?

Blewitt: Well . . . some of the business-people said the plans were too vague, so we worked with them to improve them.

SUMMARY: Unworkable, untested contingency plans developed without expertise or buy-in from the business units cost Hubris Sportswear millions of dollars in lost sales.

SCENARIO 4: TIMING

Winnit: Now, Mr. Blewitt, I understand that the shortage of time was a major factor in your decision not to test the Clothes Call software package.

Blewitt: Yes. We didn't have time to test everything, so we triaged the systems and tested only those we deemed critical and vulnerable to failure.

Winnit: And that did not include Clothes Call?

Blewitt: That's right. It was considered critical but not vulnerable because we had the vendor's word it was compliant, and there just wasn't time to test everything. It was a judgment call.

Winnit: Mr. Blewitt, how long have you been in charge of Hubris Sportswear's IT department?

Blewitt: Since 1985.

Winnit: Do you subscribe to technology trade magazines at home or at work?

Blewitt: Yes, both.

Winnit: How many?

Blewitt: Oh, maybe half a dozen, but I read more than that. It's a fast-paced industry, and you have to keep up.

Winnit: Then you likely saw many of the dozens of articles dating to the mid-1980s that plaintiffs' expert witness Dr. May Cruscham showed the jury yesterday, did you not?

Blewitt: I really don't recall . . .

Winnit: Well, you certainly read other references to the year 2000 problem in the late 1980s and into the '90s?

Blewitt: Look, I was always *aware* of the problem. We just had more pressing priorities.

Winnit: Mr. Blewitt, when did Hubris Sportswear begin its year 2000 program?

Blewitt: 1997.

Winnit: November of 1997, I believe.

Blewitt: That's correct.

Winnit: And you would agree that at that time you had known about this problem at least since the mid-1980s?

Blewitt: Well, in theory, yes, but . . .

Winnit: Would you agree with me, Mr. Blewitt, that if you had begun your year 2000 project in 1986 or even 1990, you would have had sufficient time to test and fix the Clothes Call software that failed in January of 2000?

Blewitt: Well, probably . . .

Winnit: No more questions, your honor.

SUMMARY: Any start date will look late if the project fails. It might help to argue that successful companies were on a similar schedule, that because of the availability of new tools, 1997 was actually the optimal time to begin and that time became an issue only as teams became aware of Y2K complexities unappreciated in the early '90s.

SCENARIO 5: BUDGET

Winnit: Mr. Blewitt, were you satisfied with your year 2000 testing practices?

Blewitt: Yes.

Winnit: If you had more funding, would you have tested more?

Blewitt: Of course.

Winnit: So you did not agree with the testing budget you were allocated?

Blewitt: Well, of course we could have used more.

Winnit: Who set the testing budget?

Blewitt: The board of directors.

Winnit: So it's the board's fault that the systems failed?

Blewitt: That's not what I said.

Winnit: But if the board had budgeted more cash for testing, your chances for success would've been higher, correct?

Blewitt: Yes.

SUMMARY: If a Y2K failure is traceable to senior management action or inaction, it can hit management where it hurts. The CIO and the board may disagree, but the final budget (and other global decisions affecting program outcome) must be mutually agreed upon in writing at the time. That would allow the CIO to answer: "Our testing budget was reasonable in light of the circumstances, and I supported the decision. Report XXX explains that."

The process will be looked at under a microscope.

PAUL ARNE, ATTORNEY, MORRIS, MANNING & MARTIN LLP, ATLANTA

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MORE ONLINE

For more year 2000 legal "gotchas" involving testing procedures and e-mail communications, visit *Computerworld* online www.computerworld.com/more

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Cool Career Sites

A Home Away From Home . . . Redux

By Leslie Goff

WE RECENTLY BROUGHT you a brief selection of IT community-oriented Web sites [CW, April 12]. The following is an additional listing of sites where you can commune with your fellow information technology professionals. The focus here is on discussion areas, technology user groups and professional groups. Grab a cup of joe and get ready to update your bookmark list.

Discussion Areas, Chat Rooms & Message Boards

Tek-Tips.com
www.tek-tips.com

When you need an answer to a detailed technical question, you'll find an outlet here. Participate in your choice of more than 800 forums aimed at IT managers, programmers, trainers and Internet professionals. Vendors are also invited to participate, but only under strict guidelines that prohibit them from trying to skew discussions in favor of their products. In most cases, they abide by the rules — and when they don't, other users are encouraged to attach a "red flag" to their postings.

Registration is required, but it's painless and worth the effort. You can join as many discussion groups as you wish and have them consolidated on one customized Web page. And if you post a query, you can request an automatic e-mail notification when someone responds.

As you peruse the postings, if you think someone has posted an insightful response, you can cast a vote for "TipMaster." Votes are tallied weekly, and the winner is recognized. Small details like that kind of recognition, the e-mail notification, the red flags and the thoughtful overall organization of the site go a long way toward making Tek-Tips a real resource.

Computer Jobs and Deja.com Inc. Joint Channel
www.deja.com/=cj/channels/ctj/

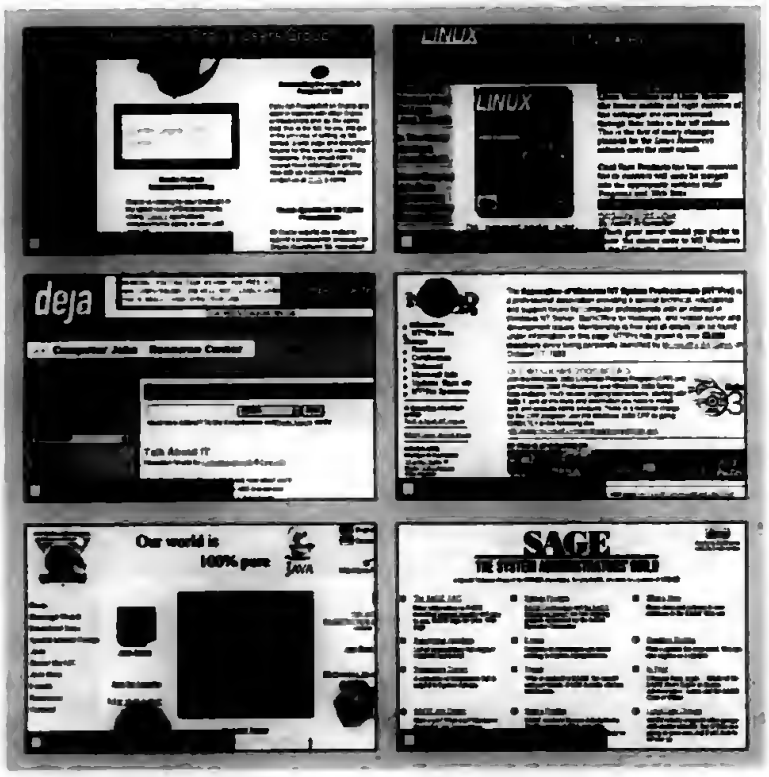
With five different forums for IT professionals, this discussion area looks promisiog, but it's still too new to tell how it will shape up. After it was launched on March 22, about a week passed before anyone contributed postings, but by month's end, a handful of users had taken notice.

Post messages to a general IT discussion group or share code in the "Open Source" forum, complain or brag about your job at the "Water Cooler," offer and seek advice on getting your credentials in "Certifications" and assess the pros and cons of consulting at "Contract vs. Permanent."

The site is co-sponsored by IT job site Computer Jobs Inc. (formerly Computer Jobs Store) and newsgroup site Deja.com, so you can link to job listings and a salary survey by Computer Jobs or other technical news groups hosted by Deja.com Inc. If you're already a Deja user, this page makes a fine oew starting point; if you're not, this new channel is worth checking out.

Message Board For International Java Club
www.java-club.com

This active, threaded discussioo is based in Germany, but most messages are in English, — or at least near-English. If you're a Java user and want to tap a large knowledge base, try posting a query here.



Technology User Groups

Groups of Linux Users Everywhere
www.linuxresources.com/glue/

Web sites in support of the Linux community have proliferated quickly. Use this site to find a Linux user group to your liking or to learn how to start one of your own.

NTPro
www.ntpro.org/indexNE.asp

The Association of Windows NT Systems Professionals Inc. (NTPro) was launched by Bill Gates in 1993, so this site is all-Microsoft, all the time. But if you're an NT user, the strike-up-the-band atmosphere here will get you in the swing of things. Discussion groups, technical tips, local user group locations and links, training and other resources will make you feel like part of the family.

International Oracle Users Group
www.ioug.org

Most Oracle user groups use their Web sites to disseminate membership information and news about the Ioternational Oracle Users Group Americas (IOUG-A). The IOUG-A goes a step further and offers members a chance to interact via the Web. Exchange technical tips io detailed, threaded discussions on all of Oracle's products, vote to influence enhancements in the next round of upgrades, participate in live panel discussions, view transcripts of prior presentations and access a deep repository of papers on database issues, development tools, languages and Web-enabled computing.

The Profession

The System Administrators' Guild
www.usenix.org/sage

Aimed at current and prospective members of The System Administrators' Guild (SAGE), this sturdy site earns mention as an online haven for its thorough listing of local chapters and links to their Web sites, its solid resources page and its section outlining job descriptions and skills profiles for systems administrators. Although it's not highly interactive, it nevertheless creates a sense of community in its efforts to advance the profession.

SANS Institute
www.sans.org

Because it offers usable tools and resources tailored to a specific niche, the SANS (systems and network security) site deserves a look-see. It provides a security road map, transcripts of online briefings on such topics as what hackers know about us, security tools guides and more.

Goff is a freelance writer in New York.

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HANGING OUT YOUR ELECTRONIC SHINGLE

A personal Web site has become a must for IT contractors and consultants. Here's some advice on what should — and shouldn't — be on it By Leslie Goff

A CONSULTANT without a Web site is like Elvis without the pelvis ... Vegas without The Strip ... a tattoo artist without a tattoo ... a Loretta Lynn show without "Coal Miner's Daughter" ... you get the idea.

"It's my electronic shingle," says Don Wallace (*www.donwallace.com*), a Delphi developer based in the Cincinnati suburb of Lebanon, Ohio. "It shows that you have arrived and that you are serious about your business."

A consultant or contractor without a Web site invites the skepticism of prospective clients, who may "wonder how much you really know about IT," Wallace says.

"If you don't have one, it's almost like saying you don't have a computer," agrees Monique Charland (*www.mcharland.com*), an independent project manager and systems engineer in Los Angeles. "We are information technologists — we're trying to show clients we know what we're doing with the latest tools. If you don't have one, you are really doing yourself a disservice."

That said, don't expect posting a Web site for your consulting practice to make you rich and famous. Charland says that since she posted her site in December, she's signed up two new clients who found her online.

But that's the rule rather than the exception. Consultants who've hung out electronic shingles say their Web sites aren't generating a lot of new business.

Laurence Simmons, owner of AvantCom Corp. (*www.avantcom.com*) in Sandpoint, Idaho, a consultancy of four independent contractors, says he has received only one offer as a direct result of his 3-year-old Web site. Although his site brings inquiries from agency recruiters and some direct clients, so far only one lead has been promising, he says.

Site Integration

But savvy consultants have found ways to use their sites as more than just marketing tools. Like large corporations, some consultants have integrated their sites into the operation of their business.

How to Boost Traffic to Your Site:

Park It There

The following are the organizations that consultants say help drive the most prospects to their Web sites:

Software Contractors' Guild
www.scguild.com
For a mere $12 per year, you get a page with your résumé and contact information, including a link to your Web page and access to contract job listings. Only working software contractors can join.

Independent Computer Consultants Association
www.icca.org
Members are listed in a searchable online directory that links to consultants' Web sites.

Contract Employment Weekly
www.ceweekly.wa.com
The $35 annual online subscription includes résumé posting, job searching and more.

Step Right Up, Folks

Discover your inner marketer with the help of the following sites.

The Art of Business Web Site Promotion
www.deadlock.com/promote
The ins and outs of how to promote your Web site that includes an authoritative – if opinionated – FAQ on how to register your site with search engines. It also features software downloads of site submission tools, a message board and more.

VirtualPromote
www.virtualpromote.com
A comprehensive guide to promoting your Web site including an explanation of meta tags and guidelines on devising keywords.

Search Engine Watch
www.searchenginewatch.com
The inside dope on how search engines operate and how to maximize your exposure on them.

Registration Desk

Submit your Web addresses here to get automatic registration with the major Internet search engines and directories:

RANDY ELIASON

One of them is Peter Mezzina, founder and president of Process Intelligence Inc. in North Andover, Mass. (*www.processintelligence.com*). He uses his site as a sort of mini-extranet, creating sections and pages on an as-needed basis to communicate with specific prospects and clients.

"Sometimes it's difficult to get prospective clients to set aside time for a first face-to-face meeting, but I can get them to look at the site," says Mezzina, whose specialty is helping companies tie existing databases and applications to their Web sites.

"I will point them to a part of the site that's hidden from the home page or that only they have access to. And with existing clients, I can post architectural diagrams or other information they need and I can password-protect it," he says.

Simmons and Wallace say they use their sites as a frame of reference for telephone interviews. When questions arise about the type of work they do, they can direct prospective clients to areas of their sites that document their experience and specialties.

Wallace also uses his site as a networking mechanism to stay in touch with colleagues. He maintains what he calls the IT Small Business Discussion Board (*www.donwallace.com/bbs*), which offers a much-needed outlet for socializing with fellow consultants. "It's my water cooler," he says.

Even if your Web site doesn't bring you new business, the cost is so low that a return on investment is practically guaranteed. Depending on the services to which you subscribe, Web hosting will cost anywhere from $200 to $400 per year. Domain registration is $70 for two years; registering your site with the top search engines ranges from free to about $100.

Goff is a freelance writer in New York. Contact her at lgoff@ix.netcom.com.

WHAT TO POST ON YOUR WEB SITE

Become the master of your own domain with the following six tips from the professionals:

Keep it Simple

Focus on content and keep the design clean and easy. Think more about quick page-loading than flashy graphics. It's a communications tool, not a sideshow. Keep the number of pages to a minimum, the site should include a mission statement, a list of projects and clients (with their permission), a products and services page, a résumé and contact information. If you have regular subcontractors or partners, include a staff list.

Also include a page that demonstrates your capabilities, interests or methodologies. AvantCom's Laurence Simmons has posted sample source code from two ActiveX-based applications. "I wanted to show the kind of work I'm interested in doing more of," he explains.

Developer Don Wallace has an FAQ explaining his preference for working with Borland's Delphi over other tools. It helps weed out inquiries from clients who offer him jobs he doesn't want to do – "like heads-down Visual Basic work" – and gives him a professional avenue for injecting a personal voice into the site, he says.

"It raises my perceived integrity level because I get away from the 'I'll do anything' attitude a lot of consultants have," Wallace says. "It's a distillation of my five years of consulting experience."

Resist Your Ego

It's professional, not personal. Pictures of your cats, your kids and your best friends – no matter how endearing – are inappropriate on a consulting site. "Personal information cheapens your business site," says independent project manager and systems engineer Monique Charland. "It's childish. People don't care where your kids go to school – they want to know what you can do."

If you have a personal or family page, keep it separate. Link to your professional page from your personal page, but not vice-versa, says Shuli Goodman, principal and owner of 7th Generation Internet (*www.7thgeneration.com*) in San Francisco, a Web site and e-commerce development firm.

Register Your Domain Name

Prospects are more likely to find you – and take you more seriously – if you have a unique Web address rather than a subdomain under an Internet service provider. "Using an America Online [Inc.] account doesn't have the same effectiveness as having your company name as the domain name," says Peter Mezzina, president and founder of Process Intelligence. "That gives [your practice] more legitimacy."

Charland started with a site under a provider's domain but "I never had any results with it because a lot of the search engines won't take subdomains," she says.

Choose a Reliable Host

"A lot of Web-hosting services are fly-by-night operations," Wallace warns. Look for one that's in business for the long haul and that guarantees availability. "The last thing I want is for someone to go to my site and not be able to access it," Mezzina adds.

Get the Word Out

Register your site with search engines and list the Web address in consulting directories. You can enlist the aid of search engine and link-submission sites or do the work yourself – but do it.

"It wasn't until I did the site submissions and listed with the IT directories that I got the payoff from my site," says Goodman, who spent 10 to 15 hours on the endeavor. "Since I started linking, I've gotten two to 10 calls per week." Also include the Web address on your résumé, letterhead and business cards.

Just Do It

Even if you have plenty of work this year, you never know what might happen next year – or even next month. "It's better to have developed a Web site before a slowdown rather than after one," Mezzina says.

If for no other reason, do it as an exercise in marketing, Wallace advises. "It's a broadening experience to put on the marketer's hat and think about what you want to say about your business to someone who doesn't know you or what your capabilities are," he says. *– Leslie Goff*

Submit It!
www.submit-it.com
Fee-based search engine registration service.

Link-O-Matic
www.linkomatic.com
Fee-based linking service.

SelfPromotion
www.selfpromotion.com
Free, robot-based search engine registration service; a $10 donation is suggested if you're satisfied with the results.

How's My Driving?
Check your site's effectiveness courtesy of the following sites:

LinkPopularity
www.linkpopularity.com
Generate a free report showing how successful your submissions have been. Enter your Web address, click the "Tell Me My Popularity" button and receive a list of how many links you have to your site from AltaVista, HotBot and Infoseek.

Search Engine Simulator
www.delone.com/web/ses.cgi
See just how the search engines read your site headers.

Rank This!
www.rankthis.com
Determine how effective your keywords are in getting high rankings at 10 major search engines. Discussion groups and tips on how to improve your search-engine rating are also featured.

Dear Career Adviser:

Now that enterprise resource planning (ERP) is part of the information technology industry, what is the future of IT professionals who work in Oracle software development with various front ends? Should I develop hands-on experience in ERP, work on client/server technology, or both? — WONDERING WHAT TO WORK ON NEXT

Dear Next No. 1:

Read on to the next question for your answer.

Dear Career Adviser:

I have 14 years of IT experience. My key current strength and skill areas are data modeling, design, development, coding, testing and implementation. I have the joint roles of developer consultant and technical team leader using a computer-aided software engineering (CASE) tool technology, specifically Coolgen by Sterling Software.

I also have had limited project experience developing a Web-enabled client/server application using a Windows NT Client with ASP/IIS/VBscript against an NT Server with Oracle 8.0. What skills should I add to secure my future? Should I spend my time getting an Oracle database administrator certification and/or add a Web flavor with Oracle's Web developer tools? Should I focus on a database perspective or a Web perspective, and what training and experience should I get? — THINKING ABOUT THE FUTURE

Dear Wondering and Thinking:

Both of you are smart to ask "what's next?" and "how do I get there?" Ideally, you'll take three steps to stay at peak career value. Start noticing trends that are important, use your current skills to get into top-tier companies and projects, and immediately educate yourself "upward" to participate in those new arenas.

But according to Oracle consulting managers, what's hot is the move from client/server to Internet platforms, the initiation of the Application Service Provider industry consortium (*www.aspindustry.org*) for delivering applications to multiple entities across a wide-area network and an evolving interest in outsourcing ERP, third-party applications and databases to large server farms and hosting centers.

You will both enjoy greater career mobility by working with languages and databases that support Web standards and are portable across multiple hardware and operating system choices: HTML, Java, Extensible Markup Language on the front end and Oracle on the back end.

Also, stick with tools that create Web applications that are both scalable and transportable. John Zambrzycki, a former Oracle Consulting manager now working with Internet start-ups in San Francisco, suggests learning front end/CASE tools like Oracle's Designer and J Developer or Sybase Inc.'s PowerBuilder and PowerJ.

FRAN QUITTEL is an expert in high-tech careers and recruitment. Send questions to her at www.computerworld.com/career_adviser.

Zambrzycki says success resides not in technical development by itself, but in the ability to apply technical solutions to functional requirements.

On the back end, Thinking's career should include more training and experience, getting certified and updating those certifications to work in the newest Oracle database features, especially the integrated use of Java and the Internet File System. Training resources range from Oracle's own, Web-based education site (*http://education.oracle.com*) to community colleges.

"Particularly if you're paying for classes on your own, you may find lower-cost and slower-paced community college courses more re-enforcing, since you're studying over a period of many weeks," Zambrzycki says.

Managers often complain that résumés call someone an experienced Oracle database administrator when, in reality, the person can barely create a table, so don't just put bleeding-edge buzzwords into your résumé. Be sure you have the skills and experience to back them up.

Dear Career Adviser:

I am an experienced database architect from an outstanding engineering lab who has applied my database experience first to offshore drilling applications and now to database development for a biotechnology company. In fact, I have excellent, database-defined skills in architecting and developing applications using SmallTalk and Perl for rapid application prototyping, and I also use object-oriented methodologies.

I also have data mining expertise, experience in massively parallel programming and have worked with real-time operating systems, all of which are very useful for e-commerce, which is where I want to work. So far, I've gotten no responses at all to my résumé.

What should I be doing differently? — NO BITES

Dear No Bites:

You're succumbing to two frequently made mistakes in how you present yourself. First, your very technical résumé shouts databases in biotechnology, offshore drilling and academia — but not Internet and e-commerce.

Second, you burden the reader with having to make the leap from where you are to where you want to go. Only your cover letter discusses how what you've done also applies to Internet and e-commerce applications; you should be aware that many companies scan in résumés and toss cover letters away.

Therefore, synergies between your current work and the Internet that aren't included in the body of your résumé are probably lost.

The bottom line? A recruiter or busy hiring manager probably won't wade through your résumé information to show how what you're doing relates to the Internet or e-commerce.

Here's what you should do: Sit down with a recruiter who specializes in Internet and e-commerce jobs and answer these questions: What do I really know about creating, coding and testing software that will work in Internet and e-commerce environments? What's in my database background and experience that an Internet or e-commerce company would be interested in? Are there underlying tools, technologies and software development processes or concepts I need to emphasize?

Then put objective and summary paragraphs right at the top of your résumé and keep showing how your skills and experience apply to Internet and e-commerce work throughout. Discuss courses or other measures you are taking to handle any gaps.

You, not the reader of your résumé, must make things obvious. ◗

WORKSTYLE BRIEFS

Business Travelers Seek Lower Fares

The widening price gap between business and leisure airfares is prompting companies to book travel more like tourists than typical businesspeople – juggling schedules to save the company money, according to a new survey from New York-based American Express Co.

"According to one travel manager, when employees see the potential savings of a negotiated fare or a connecting flight or a flight at an earlier then of day, they respond like leisure travelers, taking the cheapest flight," the study said.

During this year's first quarter, the lowest-priced unrestricted fares – those preferred by business travelers – were selling at nearly four times the cost of the lowest-priced restricted fares, often booked by vacationers, Amex said.

During the same period in 1996, business fares were only two and a half times as expensive.

The study also promoted online booking tools, which let users compare fares using a Web browser. Amex, which offers a travel application called AXI Travel, said companies using the tool have increased from 20 at the beginning of the year to 200. – *Tom Diederich*

I Would Work At Home If . . .

Thinking of telecommuting and wondering what options you have for high-speed connections? Getspeed.com can tell you.

Plug in your ZIP code, street address, area code and phone exchange and the site will tell you if Digital Subscriber Line, satellite, cable modem or wireless technologies are available in your neighborhood. The site then provides a listing of the prices and providers available. There's one drawback – you might need a compass and topographical map. A recent test of the site provided coordinates for the nearest satellite and explained that an unobstructed view is necessary to receive the signal (presumably, a call to the satellite provider would resolve that issue).

Getspeed.com is operated by Pinkham Group, a broadband technology consultancy in Norwood, Mass.

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WHAT A GREAT SOLU[illegible]ON. FOR SUN.

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their computer system disaster recovery readiness.*

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DLT TAPE

*DLTtape Provelt Index for Disaster Readiness Q1'99

TECHNOLOGY

FAT CLIENT? FAT CHANCE

Early adopters of J. D. Edwards' OneWorld software are finding that running fat-clieot enterprise resource applications over a wide-area network bogs dowo performance. Many are installing midtier terminal servers to fetch data from corporate servers for end users. ▸ 64

THE AS/400 GROWS UP

With the latest release of the OS/400 operating system, IBM's midrange computer gets mainframe-like partitioning — which lets customers configure a single AS/400e into as many as 12 separate servers. ▸ 62

DISASTER RECOVERY

Hurricanes, fire and floods can wipe out your business. We asked five IT managers to share their experiences and their advice oo how to prepare for nature's furies. ▸ 70

VIRTUAL CONTROL TOWER

A supercomputer provides real-time, 360-degree views of simulated airports to finetune operations without risking lives. ▸ 63

REVIEW: MAC OS X SERVER

Apple's third try at a Unix-based server operating system is so hard to use you may as well stick with Unix or NT, our reviewer says. ▸ 59

WAREHOUSE END RUN

The Massachusetts Housing Finance Agency proves that you can avoid data warehousing using distributed query tools — if your data analysis needs aren't too great. ▸ 61

ASSAULTING THE BATTERY BLUES

Enrev Corp. says its software can help charge the batteries in laptops, PDAs and mobile phooes faster — with five times as much energy. Would your users like that? We thought so. ▸ 62

IN THEIR NATIVE TONGUE

Emerging Companies: Idiom Technologies lets electronic merchants maintain multiple foreign-language sites from a ceotrally managed, original-language site. ▸ 66

FLASHBACK: 1970

In a Kroger's supermarket, a grocery-scanning technology test set off the chain of events that brought about the now-ubiquitous bar code. ▸ 74

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KEVIN CORNISH, Bechtel's software developi manag er, faced "a huge learning curve

EAI: IT DON'T COME EASY

SIX YEARS AFTER IT BECAME a *very* early adopter of Enterprise Application Integration (EAI), construction giant Bechtel Corp. is beginning to win the fight — but it's been uphill all the way. In a frank interview, Bechtel's software development manager explains how EAI can add complexity even as it brings orderly integration and consistent interfaces.

58

BECHTEL SEES PAYBACK FROM APP INTEGRATION

Publish/subscribe middleware lets data move easily among apps

SIX YEARS into its battle to integrate its hundreds of applications, San Francisco global construction giant Bechtel Corp. is beginning to win the fight — but it's never been easy.

Kevin Cornish, Bechtel's software development manager, recently told *Computerworld* senior writer David Orenstein that Enterprise Application Integration (EAI) can add complexity even as it brings orderly integration and consistent interfaces. Bechtel used Tibco Software Inc.'s publish/subscribe middleware, which lets developers make data from any application available to any other application that wants it.

KEVIN CORNISH, software development manager at Bechtel, says EAI has made it simpler to access information

Q: What problem has Bechtel been trying to solve with EAI?

A: We custom-build very complex infrastructure projects. We don't make widgets. Every petroleum refinery is a little bit different. Project managers [feel] that 'I'm unique, and I need a unique or eclectic blend of systems on my project.'

We had an [architecture] map when I first started here. ... There were lines drawn every which way. It was the world's biggest spider web, and it was composed primarily of spaghetti code.

Q: How did you first try to solve this?

A: We tried to create the mother of all applications that would cross all of our business lines and all of our primary business functions. In the three years it took to create that application, our business went primarily overseas, and we started doing projects in a bunch of offices. Having one database that everyone tied into across the WAN was just not technically feasible.

Q: So why did you turn to Tibco's EAI software?

A: The publish/subscribe model [provided] a common object model, a common language to define all our data elements [Tibco Definition Language] and ... a framework that we could use to build new applications ... using publish/subscribe to integrate the new applications with the existing ones. We didn't want to do a big bang and change out all 300 of our applications and rebuild all of them.

Q: How did it go?

A: We had all sorts of trouble. ... We had to bring our current mix of software developers up a huge learning curve. We probably were developing for a year and a half before we rolled anything out on a project. It was a whole new environment for our software developers. It was object-oriented, it was real-time interaction.

Q: How did it add complexity?

A: Publish/subscribe ... creates an enormous burden for configuration of applications to make sure that they are subscribing to or publishing the correct objects. Change management was a big deal. When someone changes the definition of an object on the front end ... it would cause a whole bunch of applications to change what they did with that object because attributes were added to it.

Q: So how are you adjusting?

A: We still have about 300 applications — we probably have 40 applications that do publish/subscribe, and there are point-to-point interfaces among all of them. ... We're trying to simplify that now by having [a] hub-and-spoke architecture. Once we've done that, we can then change out the technology ... at one place rather than at all 40 of these applications.

Q: What benefits has EAI brought?

A: The No. 1 benefit has been the requirement to create a common object model. Another one is that we can create ... cross-functional applications that consolidate data from a number of different upstream applications. We have this publish/subscribe technology that is basically flooding our network with information. It's much simpler to gain access to that information. ▶

J. D. Edwards to Take E-Commerce Plunge

Browser-based apps also in the works

BY CRAIG STEDMAN
DENVER

At its Quest user group conference here this month, J. D. Edwards & Co. became the latest vendor of ERP software to latch on to e-commerce.

The Denver-based vendor announced plans to put together an e-commerce offering centered on an Internet-style portal that's due this fall. Also in the works, for summer release, is a set of browser-based applications with simplified user interfaces for customers, suppliers and other users.

The announcement of the ActivEra E-Business strategy follows a similar move earlier this month by enterprise resource planning (ERP) market leader SAP AG [CW, May 10]. Vendors such as Baan Co. and PeopleSoft Inc. have also made e-commerce announcements in recent weeks.

Is There a Need?

The Internet group hug is driven more by marketing than by immediate user demand, said Joshua Greenbaum, an analyst at Enterprise Applications Consulting in Berkeley, Calif. "It's premature to expect customers to attach themselves to this vision in droves," Greenbaum said. For many users, he added, the first priority is simply to get their ERP systems, such as J. D. Edwards' OneWorld suite, fully installed.

That's the case at Granite Rock Co., a road construction company and maker of building materials in Watsonville, Calif.

Granite Rock is talking to some customers and suppliers about the potential for doing business online. But a more pressing concern is finishing an ongoing installation of J. D. Edwards' back-office applications, said Brad Stimson, Granite Rock's ERP project manager. "We're still so involved with this project that I can't give a definite answer" on when the company might be ready to start down the e-commerce path, he said.

As part of its e-commerce strategy, J. D. Edwards also said it is developing knowledge management capabilities that users will be able to access through the upcoming ActivEra Portal.

It also announced the acquisition of Numetrix Ltd., a Toronto maker of Internet-based supply-chain planning software, and a deal to resell online procurement applications made by Ariba Inc. in Sunnyvale, Calif. ▶

OneWorld Reporting Tools Found Lacking

OneWorld's built-in reporting tools have been a source of problems for early users of the 2-year-old ERP software.

Granite Rock already switched to another reporting package after end users found the tools supplied by J. D. Edwards too complex to work with, said corporate controller Steve Snodgrass.

Several other users said looking at alternatives to the J. D. Edwards report writer is a top priority. "Even just lining up columns is a difficult proposition" with the built-in software, said Daniel Johnston Jr., database administrator at Optika Imaging Systems Inc. in Colorado Springs.

Dave Girard, chief operating officer at J. D. Edwards, acknowledged that the company's reporting software requires "a very sophisticated user."

Companies that want reports to be created by workers who aren't technology experts "would probably be better served by third-party tools," Girard said.

– Craig Stedman

Mac OS X Server: No Easier Than NT, So Why Bother?

Apple's third try at a Unix-based server OS uses a mishmash of interfaces

BY GALEN GRUMAN

Mac OS X Server is Apple Computer Inc.'s third attempt to deliver a Unix-based server operating system after unsuccessful attempts with its own A/UX and IBM's AIX. So is the third time the charm? No.

PRODUCT REVIEW

Ballyhooed by Apple as combining "the strength of Unix with the simplicity of the Macintosh," Mac OS X Server is a poorly designed, poorly integrated set of three operating systems: Apple's Macintosh, Next Inc.'s Next OS and the freeBSD Unix. Coming from a company that has promoted a consistent interface design for 15 years, it was a shock to use an operating system that spread related functions across four very different interfaces (Mac, Next, Unix command line and Web browser) in a seemingly random way.

Things started badly when, after I followed the setup assistant, the AppleTalk networking services didn't work. After I spent nearly an hour on the phone with a support technician, we realized that the setup assistant created a conflict that essentially disabled the AppleTalk protocol stack. (The operating system hung because we had activated three Ethernet ports, though only one was in use.)

I doubt any Mac-oriented user would have realized the error, and I suspect many network administrators would have been surprised, too. Even the technician didn't uncover it until we started opening setup profiles through the Unix command-line interface. The network management controls were of no help.

Mac OS X Server allows remote administration over the Web. I found the browser interface simple and complete, but on the server, I never could set up users' access privileges to drives — despite hours spent switching between the Next operating system's Inspector system (to set up access privileges) and its Network Manager software (to set up users).

Spreading out core administration functionality shows the naïveté behind the operating system's design. But there's more.

The Next interface's managers — programs that explore and manage drives, files and applications — differ greatly from those on the Mac or in Windows. Because you're switching back and forth, it's easy to get confused. Why Apple didn't develop a single user interface approach for the operating system is a maddening mystery.

The Apple menu usually disappears after you use a Next-based function. You must click the desktop to get it back — if you haven't already switched the system off, thinking it had crashed.

NetBoot Software

One of Apple's big pitches for Mac OS X Server is its NetBoot software, which treats Macs as thin clients so users can't install or change software settings. But you'll need an iMac or a January 1999 or later Power Macintosh G3, which are expensive thin clients. The poor interface design of the Mac OS X Server also showed through clearly here. To change the client software, you can't just install Mac software on the server, even using its Mac OS emulation mode.

Instead, you must go to a client, log in as an administrator, run the NetBoot administration software on the server's hard drive from the client, install or remove any applications, reboot and log in to the server again to save the new settings for all further client use.

Although possibly useful for remote, Mac-oriented offices, NetBoot is clearly aimed at schools. But pity the poor teacher or librarian who becomes a network administrator after having been promised Mac-style ease of use.

In a nutshell, I can't see any reason to buy Mac OS X Server. Because even experienced Mac users will need hands-on IT support for the setup and administration, why not just use the more familiar Unix or Windows NT?

Gruman is a former Computerworld editor and now a freelance writer in San Francisco.

GRADE

MAC OS X SERVER

Apple Computer Inc.
Cupertino, Calif.
www.apple.com

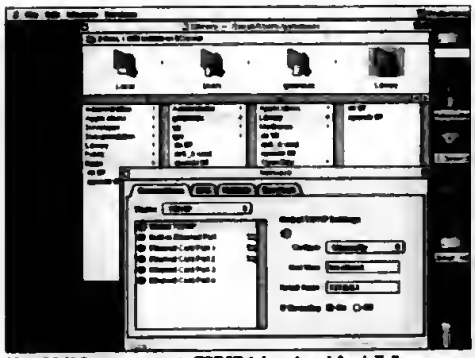
PRICE: $499
Also available preinstalled on Macintosh Server G3 systems.

SUMMARY: A difficult-to-use, awkwardly implemented server system that is a mishmash of Macintosh, Next OS, Web and Unix command-line interfaces.

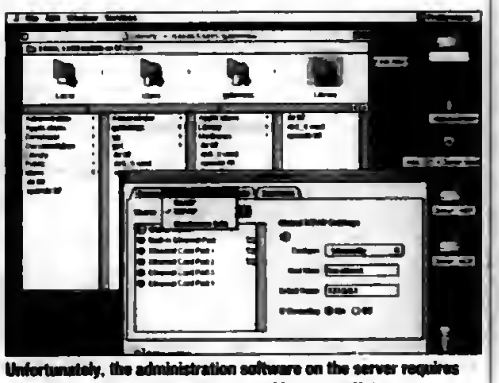
PROS:
Lets you administer connected Macintoshes as thin clients.

CONS:
Difficult to set up and administer from the server; confusing mix of interfaces; requires new Macintoshes as clients in order to use NetBoot thin-client feature.

OVERALL GRADE: D



Mac OS X Server supports TCP/IP (above) and AppleTalk connections simultaneously, letting users set access privileges for both



Unfortunately, the administration software on the server requires users to run several programs – some Mac, some Unix

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ARE YOU WEARY OF WAREHOUSES?

Distributed queries can avoid the pain of building a data warehouse — if your needs aren't too great

BY STEWART NECK

SOMETIMES a data warehouse takes too much — too much time to implement and too much money. Some organizations just want to leave the data in legacy databases and run straightforward queries against it.

The Massachusetts Housing Finance Agency (MHFA) was in just this type of pickle. The Boston-based affordable housing agency had at least 13 databases filled with information about who owns property, subsidy and payment histories, grant allocations and property descriptions. But it didn't have a way to easily look into all of the databases at the same time to run reports or perform thorough queries.

JOHN SOKES

ANALYST CARL RICHARDSON at the Massachusetts Housing Finance Agency rolled out DQpowersuite in three months to give management Web-based database access

"We looked into the possibility of building a data warehouse, but to try to do that along with our Y2K [fixes] was just too much," said Carl Richardson, a project leader and senior program analyst at MHFA.

Richardson instead chose DQpowersuite from Charlotte, N.C.-based Metagon Technologies LLC and rolled it out in three months to give 35 senior managers Web-based database access capabilities.

DQpowersuite includes DQbroker, which understands the overall database system architecture, and DQtransform, a piece that automates the extraction, transformation and loading of data from any source to any target. When a query comes in that requires access to multiple databases, the broker distributes the components of that query as close to each database as possible, which lets each database retain control of its own data.

The MHFA has installed DQpowersuite on its intranet as a type of back-end database search engine that works with Cognos Corp.'s PowerPlay Web and Impromptu Web Reports to perform searches and deliver reports.

"Unlike a full data warehouse, we can make associations outside of the database and don't have to do as complete a data cleansing as we would have otherwise," Richardson said.

"Prior to using the Metagon tool, we had difficulty accessing different databases simultaneously," said Gail Bishop, project manager at MHFA. "Now we're able to look at data from different databases and put it together in the same report, which we couldn't do before."

Good if Simple

Analysts said avoiding a data warehouse by using distributed queries can be useful for relatively simple or routine queries.

Some data doesn't necessarily require a full data warehouse for analysis, and users are turning to tools from Metagon, Inforay Inc. in Cambridge, Mass., and Enterworks Inc. in Ashburn, Va., for cross-enterprise data views, said Bob Moran, an analyst at Aberdeen Group Inc. in Boston.

It has suited the MHFA well, Richardson said. With DQpowersuite, the agency has been able to slash the time it takes to run a cross-database analysis of a management company from two days to "about 15 minutes," Richardson said. And users are clamoring for it. The first finished phase of the rollout was scheduled for June, then pushed up to March. Now Richardson said he expects to open access to all 300 users by September.

Richard Finkelstein, president of Performance Computing Inc., a Chicago consultancy, said such cross-database querying is useful for simple or predefined queries but doesn't offer the full range of query capabilities available from a data warehousing.

"Such connectivity is sometimes based on simplifying the database language, which can cause limited database functionality and performance," he said. ▶

BRIEFS

Lotus Secures Web Collaboration

Lotus Development Corp. is shipping QuickPlace, software designed to provide distributed teams with secure Web collaboration. The tool lets workgroups use a Web browser for communication. It works with Lotus' Domino server and doesn't require special client software, according to the Cambridge, Mass., company.

The stand-alone server costs $995.

www.lotus.com

Forte XML-Based Integration Debuts

Forte Software Inc. has announced Forte Fusion, an XML-based suite for enterprise application integration. The Oakland, Calif., company said the suite's Extensible Markup Language (XML) backbone enables business processes to be defined and changed with no impact on applications, such as SAP AG's R/3. The suite is available for Windows NT and Unix.

Pricing starts at $200,000.

www.forte.com

QueryObject Releases MVS Data Mart

QueryObject Systems Corp. has released Version 3.0 of its QueryObject System data mart software for IBM's MVS S/390. The system has a new Web server that lets users turn mainframe data into analytical objects that can be deployed for analysis over intranets and extranets, the company said. Each installation costs $275,000.

www.queryobject.com

Spreadsheet for Palm

Cutting Edge Software Inc. has released Quicksheet 4.0, a spreadsheet for Palm Computing's handhelds. The application can automatically synchronize spreadsheets to or from Microsoft Corp.'s Excel, according to the Plano, Texas, company. It offers 45 built-in scientific, financial, statistical, date/time and aggregate functions.

The software costs $49.95.

www.cesinc.com

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www.compaq.com/nonstopfacts

BRIEFS

Compaq Launches An Armada

Compaq Computer Corp. has announced the Armada 1750, a notebook PC with Intel Corp.'s 333-MHz Mobile Pentium II microprocessor. The system offers a 40-byte hard drive, 64M bytes of memory, a 24-speed CD-ROM and a 56K bit/sec. modem, according to the Houston company.

Prices start at $1,999.

www.compaq.com

Data General Ships Pentium Server

Data General Corp. is shipping the AV 2300, a server that incorporates single or dual 500- or 550-MHz Pentium III processors. The entry-level Windows NT server comes with 512K bytes of cache and up to 20 bytes of memory, according to the Westboro, Mass., company.

Prices start at $3,077.

www.dg.com

HP Notebooks Debut

Hewlett-Packard Co. has announced the HP OmniBook XE2 notebook PC for small and medium-size businesses. Users can choose a 300- or 333-MHz Pentium processor or a 266- or 333-MHz mobile Celeron processor. The system ships with a built-in 56K bit/sec. modem, up to 256M bytes of synchronous dynamic RAM and a 24-speed CD-ROM, according to the Palo Alto, Calif., company.

Prices start at $1,600.

www.hp.com

Intergraph Adds PC, Web Server

Intergraph Corp. is shipping the TD-200 Professional PC and the InterServe 90 server, which contain the 550-MHz Pentium III from Intel Corp. The TD-200 was designed for computer-aided design, and the InterServe 90 was designed for Internet services and thin-client/server-based computing, according to the Huntsville, Ala., company.

TD-200 prices start at $2,422; InterServe 90 prices start at $3,890.

www.intergraph.com

AN AS/400 DIVIDED MAY HELP USERS

Mainframe-like partitioning capability could aid server consolidation

BY JAIKUMAR VIJAYAN

A MAINFRAME-LIKE partitioning capability supported by the latest release of the OS/400 operating system will let large AS/400 users configure a single AS/400e server into as many as 12 separate servers — each with its own processor, memory and disk space.

The idea is to let users consolidate multiple smaller AS/400 systems into a single large server for ease of management and improved scalability. Logical partitions also let users concurrently run test and production environments in the same box.

"It's pretty exciting technology," particularly for companies with large AS/400 installations, said Michael Crump, a project leader at Ball-Foster Glass Container Corp. in Muncie, Ind. Though there are no firm plans yet, Ball-Foster may do a pricing analysis to see if there are any cost benefits to consolidating the company's four AS/400s into a single large server, Crump said.

The release — OS/400 V4R4 — also builds strongly on the Web functionality, enterprise resource planning capabilities and cross-platform technologies IBM has integrated into the AS/400 during the past few years, said Rizal Ahmed, a vice president at The 400 Group, a consultancy based in Dedham, Mass.

That includes new Java security features, an enhanced Java tool box and development kit, virtual private network support, support for Secure Sockets Layer and antispamming technology. Other integrated e-commerce technologies in V4R4 include the latest versions of IBM's WebSphere application server, the Net.Commerce e-commerce application suite and Lotus Domino R5 for the AS/400.

Also included in V4R4 is the newly renamed DB2 Universal Database for AS/400 with support for "rich" data types such as multimedia objects.

"With over 3.2 million lines of new or changed code, it definitely is one of the most significant enhancements" to the OS/400 in years, Ahmed said.

The latest release of the operating system, which is now shipping, can be purchased from IBM under the new subscription pricing scheme announced by the company in January. Under the plan, users need to be on an annual or multiyear subscription plan to get new software releases.

The enhancements show that "IBM is delivering on its promises to open the AS/400, embrace Java and bring Web-enablement to systems that could previously only support legacy back-office applications," said Buck Calabro, an analyst at Commsoft Corp., a consultancy in Albany, N.Y.

For instance, the support of binary large objects and PC data types found in the AS/400 version of DB/2 will allow interchange of data among the AS/400 and most other platforms, Calabro said.

Application Development

Similarly, the AS/400's support of Domino has given Ball-Foster a new application development environment, according to Crump.

"We are designing some new custom applications with it [using AS/400 data] and are looking at some off-the-shelf Domino applications like GWI HelpDesk," Crump said.

The V4R4's enhanced Java capability will help Cornerstone Retail Solutions in Austin, Texas, more closely tie its AS/400 environment to a Java-based point-of-sale network that connects its retailers to the company, said Bill Steadman, manager of midrange services at the company.

The latest operating system release builds on a concerted IBM campaign to recast the 10-year-old AS/400 platform as a server capable of handling both legacy and current applications.

Expected AS/400 hardware revenue of $3.6 billion this year would represent a 10% growth compared with last year, according to research firm Solomon Smith Barney in New York.

AT A GLANCE

What's New in OS/400 V4R4

Logical partitioning: Lets users split a single AS/400 into 12 separate servers for consolidation and performance

Internet-based communications and e-commerce: Up to 40% faster TCP/IP, SSL, WebSphere, Net.Commerce and Net.Data e-commerce packages

Virtual private network: For secure communications

Java: Java development kit and tool box

Assaulting the Battery Blues

Software offers longer life, faster recharges

BY MATT HAMBLEN

Mobile users are always screaming about running out of battery power at a critical moment while using a cellular phone, handheld or laptop.

Equally frustrating for users and information technology managers alike is recharging a battery and getting successively reduced battery life because of the battery memory phenomenon. That occurs when, for example, you use five hours' worth of a six-hour battery: The typical recharger will recharge the battery with only five hours of life.

"My cell phone battery and those in the company cell phones are constantly running out of power, and if I had new technology to help, I'd love it," said Mike McNeil, a planning engineer at FMC Corp., a food additive and pharmaceutical manufacturer in Rockland, Maine.

He might get his wish.

Enrev Corp. in Atlanta, a battery software company, says its proprietary software, being licensed for the first time, can charge batteries five times faster and give them four times the life.

Enrev's system monitors a battery's electrochemical state during a charge, providing feedback that keeps the charge at the optimum level, according to Enrev and analysts.

It also brings older batteries back to full charge, breaking through the so-called memory problem.

Enrev is selling licensed copies of its software to device makers to install on chips or as software, but it hasn't announced any buyers.

Though he called the software valuable, Matt Hoffman, an analyst at Dataquest in Chapel Hill, N.C., said Enrev's biggest hurdle will be finding device makers to incorporate it.

Dell to Install Linux on Some PCs

BY DOUGLAS F. GRAY
LONDON

Dell Computer Corp. last week said effective immediately, it will install Red Hat Software Inc.'s Linux 6.0 operating system on some of its computers in the U.S. and Europe.

Round Rock, Texas-based Dell said Red Hat Linux 6.0 will now be available on certain configurations of its OptiPlex business desktop computers, PowerEdge servers and Precision workstations in the U.S.

The company also said availability in the Asia-Pacific region is expected later in the second quarter.

Dell began selling systems with Red Hat Linux 5.2 preinstalled in March.

Gray writes for the IDG News Service in London.

Virtual Control Tower Tests New Flight Patterns

SGI supercomputer gives real-time, 360-degree view of up to 200 simulated aircraft and ground vehicles

BY ROBERT L. SCHEIER
MOUNTAIN VIEW, CALIF.

When your plane is making its final approach to San Francisco in the fog, the last thing you want is for the air traffic controllers to start experimenting with nifty new flight patterns. That's clearly a job for a simulator — a really big simulator, like the virtual control tower now being fine-tuned at NASA's Ames Research Center in California.

Housed in a low-slung, modern building here at a cost of $10 million, the system uses a Silicon Graphics Inc. Onyx2 supercomputer. It has 16 R10000 processors and runs Irix (SGI's Unix variant) with 2G bytes of memory and six graphics subsystems to process 3-D graphics in real time, said Nancy Dorighi, operations manager for the project.

One of the biggest challenges, Dorighi said, has been integrating the SGI supercomputer with the 90 PCs used by pilots and ground-control operations personnel who communicate with the virtual control tower during tests and with the projectors that produce the actual images.

For example, during a recent demonstration, a plane approaching the runway from the south jerked toward the runway instead of gliding smoothly like a real airplane. Out another window, a United Airlines 777 with blinking hazard lights slowly pushed back from the gate, but the tractor that in real life would do the pushing was nowhere to be seen.

Doing a 360

Once the proper images and data have been loaded, any airport in the world can be simulated by projectors in a 360-degree view out the control tower's 12 glass windows. Simulator controllers can dial in any season, time of day or weather. They can also experiment with different flight patterns to see which ones provide the highest level of safety, the least noise in surrounding communities and the fewest fuel-wasting delays.

When complete, the system will simulate the movement of up to 200 aircraft and ground vehicles. One of its earliest uses will be to test possible locations for a new runway at the San Francisco airport, whose weather problems make it the nation's leader in ground delays.

An earlier system that simulated only ground operations, such as aircraft taxiing from gates to runways, is already saving Delta Air Lines Inc. $20 million per year, Dorighi said. Delta officials were unavailable for comment.

The virtual control tower, which is undergoing tests and final configuration, is expected to be operational this summer for use by airlines, airport planners and airport controllers.

THE $10 MILLION 3-D SYSTEM will be able to simulate any weather conditions at any time of day, at any airport in the world

NTT Develops New Storage System

Optical memory holds 20 times more than DVD

TOKYO — JAPANESE telecommunications giant Nippon Telegraph and Telephone Corp. (NTT) last week said it has developed a high-density optical memory technology that can store more than 20 times the data of a conventional digital video disc (DVD).

NTT said a chip made with the technology would be the size of a business card and could potentially store 100 billion bytes of digital information. That amount of storage would make the chip one of the densest memory devices to date, providing enough memory to store more than 80 television-quality movies or 100,000 novels.

The technology, which for now is read-only, was designed to be used in memory chips for portable devices such as handheld video games, according to a company spokesman. It could also find a home in such devices as personal digital assistants and smart phones.

Unlike disk storage systems, a chip made with the NTT technology doesn't need to spin, eliminating the skips associated with today's optical discs.

Several companies have recently unveiled super-high-density storage technologies. Both IBM and Fujitsu Ltd. last week said they have developed magnetic storage technologies that potentially could hold 27G bytes of data on a 3.5-in. drive.

NTT said it will start producing 224M-byte prototypes of the chips early next year.

– IDG News Service, Tokyo Bureau

every second, every day, 100s of millions of $$$ in interbank transactions flow back & forth & back over secure systems from Compaq
www.compaq.com/nonstopfacts

BRIEFS

Cisco Tool Views SNA Sessions

Cisco Systems Inc. is shipping CiscoWorks Blue SNA View 2.0, software for viewing mainframe-based Systems Network Architecture sessions within an IP infrastructure.

According to the San Jose company, the product integrates with other network management tools such as CiscoView, CiscoWorks-2000 and IBM's NetView.

Pricing ranges from $10,000 to $20,000.

www.cisco.com

RedCreek Tackles VPN Security

RedCreek Communications Inc. has announced the Ravlin 7100, a hardware device for virtual private network security. The product supports Data Encryption Standard (DES) encryption at 44M bit/sec. and Triple DES encryption at 22.5M bit/sec.

The device costs $7,500.

www.redcreek.com

Antara to Add Monitoring Tool

Next month, Antara LLC plans to ship Antara Port Authority/IT, a network monitoring device for analysis of application performance.

The device sits between a Gigabit Ethernet network and application management software, according to the Campbell, Calif., company.

Pricing starts at $7,995.

www.antara.net

D-Link Offers Net Starter Kit

D-Link Systems Inc. has announced the DFE-910 10/100 Network In A Box, an Ethernet/Fast Ethernet network starter kit for small businesses and branch offices.

According to the Irvine, Calif., company, it includes two 32-bit Peripheral Component Interconnect network interface cards, a five-Port Hub Auto-Sensing/Auto Negotiation 10/100 hub with segment switch and more.

The kit costs $110.

www.dlink.com

ONEWORLD: BATTLE OF THE BOTTLENECKS

J. D. Edwards users latest to feel network performance pinch from ERP applications

BY CRAIG STEDMAN
DENVER

SOME EARLY adopters of J. D. Edwards & Co.'s OneWorld ERP software are learning what others before them have found: Running fat-client business applications over a wide-area network can mean a lot of sitting and waiting for end users.

The constant shuttling of data between corporate enterprise resource planning (ERP) servers and PCs set up as OneWorld clients can slow network throughput to a crawl, said several users at the annual conference of J. D. Edwards' independent user group here this month.

Users of Oracle Corp.'s ERP applications had the same problem with fat-client software it shipped two years ago.

To ease the bandwidth crunch, many OneWorld users are turning to the same approach their Oracle counterparts used: installing terminal server software as an intermediary that reduces the processing done on PCs by fetching data from corporate systems and feeding the information to end users.

Network bottlenecks uncovered during tests were a big reason Granite Rock Co. decided to put off a OneWorld installation at its roadway construction division and start instead with J. D. Edwards' older green-screen software [CW, May 24].

Even with fewer than 10 end users due to get the software when the division went live in April, OneWorld's performance over the WAN was expected to be problematic, said Granite Rock project manager Brad Stimson.

The Watsonville, Calif., company, which also makes construction materials, now plans to use Microsoft Corp.'s Windows Terminal Server software as a single OneWorld client handling data requests for end users. That "seems to settle the performance issues," Stimson said.

Granite Rock, which already uses OneWorld to run some of its corporate financial systems, hopes to begin migrating its paving unit to the ERP system in September, he added.

Optika Imaging Systems Inc. in Colorado Springs is using terminal server software made by Fort Lauderdale, Fla.-based Citrix Systems Inc. to link its London sales office to OneWorld financial applications running at the company's headquarters.

Burden of Bandwidth

The network bandwidth needed to run OneWorld over a WAN "was just prohibitive" even though there are only two users in London, said Daniel Johnson, database administrator at Optika. On the other hand, he said, the Citrix-based setup runs fast enough that Optika employees in Colorado Springs are tempted to use it instead of connecting directly to the OneWorld server.

Dave Girard, chief operating officer at Denver-based J. D. Edwards, said terminal server packages should be a good alternative for users whose WANs are stressed by OneWorld.

J. D. Edwards has also developed thin-client Java and HTML user interfaces that run in Web browsers. Those don't yet support the full OneWorld suite, but Girard said that will be fixed in an upgrade of the ERP software due by mid-June.

Oracle gave up on developing its fat-client Windows software a year ago and now ships new ERP releases only with browser-based clients that connect to application servers via the Internet. ▶

JUST THE FACTS

The "ERP-on-A-WAN" Blues

The problem: Users said fat-client enterprise resource planning software from vendors such as J. D. Edwards and Oracle can bog down throughput on their wide-area networks.

The cause: Data constantly moves between corporate servers and remote PCs that do most of their own processing, resulting in contention between users for network bandwidth.

The solutions: Install new Internet-based application releases that run in Web browsers or put Windows emulation software on the PCs and tie them to a midtier terminal server

MORE ONLINE

For *Computerworld* coverage of J. D. Edwards and related resources, visit our Web site.

www.computerworld.com/more

Trading Firm Chooses ATM, Frame Relay To Pave Way for New Applications

Network will provide bandwidth for Oracle-based sales and service application

BY SUMNER LEMON
HONG KONG

Local trading company Da Chong Hong (DCH) recently completed changes to its network infrastructure as part of a program to deploy an Oracle-based application designed to support its automotive sales and service business.

DCH switched from a leased-line architecture to one based on Asynchronous Transfer Mode (ATM) and frame-relay services from Hongkong Telecommunications Ltd.

Previously, remote sites were connected to DCH's Kowloon Bay headquarters over 50 separate leased lines, ranging in capacity from 9.6K bit/sec. to T1. In addition to increasing the bandwidth, the new ATM/frame-relay-based network offers cost savings.

"We anticipated [that] if we don't upgrade or we don't change from a leased-line architecture to ATM/frame relay, we will be paying roughly [$129,000] more a year," said Frank Tse, general manager at DCH's Group Information Technology Division.

For the network upgrade, DCH tapped IBM, which had supplied RS/6000 servers for the Motor System.

DCH had also approached Cisco Systems Inc. because of its technology and close relationship with Hongkong Telecom but went with IBM because using a single vendor for computer hardware and networking equipment offered more stability in the event of problems, Tse said.

"We had a very bad situation at the end of last year when the machine [intended to run the Motor System] was almost fully loaded by the development people, and we found there could be a problem with either the communication line, the [RS/6000] or the PCs. We had to resolve it very quickly," Tse said.

At first, Tse suspected that the Oracle Corp. application was the culprit, but software was quickly ruled out. "We [then] suspected it could be an IBM problem. We talked to them, and they reacted very quickly and tried to troubleshoot whether the problem was in the machine. The result was negative, but it didn't resolve our problem," Tse said.

Even though IBM's hardware had been ruled out as the root of the problem, IBM's support staff was willing to help.

IBM helped identify the fault as a leased-line problem, and Hongkong Telecom was able to quickly give DCH the needed bandwidth. ▶

Lemon writes for the IDG News Service in Hong Kong.

New Tools Enforce E-Mail Rules

Content filters scan for keywords, quarantine questionable messages

BY DOMINIQUE DECNMYN

Copyright violations. Leaked trade secrets. Litigious competitors. Wasted bandwidth. No wonder U.S. companies are waking up to the need to have e-mail policies.

THE *PEORIA JOURNAL STAR*'s Ron Rude says Command View Message Inspector appeals to him because it can block spam and protect sensitive company data

A new batch of tools can help businesses verify compliance with those policies.

Ragen MacKenzie Inc., a Seattle brokerage firm, has implemented Assentor content filtering software from SRA International Inc. in Fairfax, Va.

Although initially installed to comply with Securities and Exchange Commission requirements for the securities industry, the software is also being used to scan e-mail for potentially offensive content such as racial slurs, said Senior Vice President Jim McCollister.

Like most content-filtering applications, the software scans for the presence of certain keywords in all outgoing or incoming e-mail. Potentially offensive messages are "quarantined" by the system until they have been manually checked.

The *Peoria Journal Star*, a newspaper in Peoria, Ill., has had an e-mail policy in place for about a year. Initially "we didn't have any way of enforcing it," said Ron Rude, technical services supervisor. But in April, the paper started to beta-test Command View Message Inspector, a new e-mail content tool from Elron Software Inc. in Cambridge, Mass.

Rude says the product appeals to him because it has the ability to block inbound spam and protect confidential information. Command View Message Inspector costs $1,195 for 25 users.

Another recently launched tool is Melia from MicroData Group Inc. The Topsfield, Mass., firm is positioning it as an affordable and easy-to-use alternative to content-filtering products.

Though it doesn't scan the content of e-mail messages, it uses Microsoft Exchange server logs to create detailed reports that show who's sending e-mail to whom. Unlike most e-mail policy tools, which operate on a company's e-mail gateway, Melia will also track internal e-mail messages. The software costs $495 per server.

"Five years from now, all large organizations will use these [content-filtering] tools, and they will be much more powerful," predicted David Ferris, an analyst at Ferris Research Inc., a San Francisco-based research firm.

Ferris said he envisions that every corporation will have a unit within the information technology department dedicated to monitoring e-mail.

MOREONLINE

For articles, publications and other resources related to e-mail privacy and policies, visit our Web site www.computerworld.com/more

Tivoli's New Management Approach

Use IT to manage business processes, vendor advises

BY SAMI LAIS

In the past three weeks, network management tool developer Tivoli Systems Inc. has shown off more than a dozen of the components in its polished and expanded Enterprise suite, trumpeted 60 new partnerships and introduced one new strategy designed to allow information technology managers to get out of the business of managing IT resources and start using IT to manage business processes.

A stream of announcements of coming tools and newly revamped older tools from the Austin, Texas, company reflects that focus.

Tivoli last week announced a new version of IT Director systems management software for small and midsize businesses. That followed similar promises of new products, including four new Decision Support Guides — templates of best practices for enterprise resource planning and network management.

Service Desk 6.0, which links back-office IT management operations with front-office IT service-level management delivery, epitomizes Tivoli's new approach to building its tools.

Network management software has relied on skilled workers; the new smart tools "internalize many of those skills so workflow will be streamlined," said Jonathan Eunice, an analyst at Illuminata Inc. in Nashua, N.H.

Set for release later this year, the new tools represent a conceptual shift borne of Tivoli's own internal reorganization, Eunice said. Process management — "some call it an integrated service desk approach," he said — shifts the IT management focus from the systems administrator and operator's console to the help desk and problem resolution.

Chris Althern, systems administrator at General American Insurance Co. in St. Louis, said he has been happy with Tivoli's older tools. Deployment of a recent software patch went so smoothly that users didn't notice it. But he said he's skeptical about restructuring business processes and that his company is unlikely to undertake such an initiative while current processes function well.

But it would be artificial to separate the new tools from the strategy, said Mike Turner, Tivoli vice president for enterprise solutions. He described software deployment in the new model as follows:

Group 1 selects pilot systems on which to test a new file pack, which is a roster of software for installation. As it works, information on the deployment's status pops up on Group 2's to-do list. Group 2 begins to build the new file pack. Group 3 checks its to-do list and begins to deploy the file packs to desktops.

As each task is finished, that fact is automatically recorded, and the process advances.

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IDIOM APP SPEAKS YOUR LANGUAGE

WorldServer software keeps multilanguage Web sites updated in fraction of time, cost

BY JULIA KING

ONLINE shoppers may browse in more than one language, but few electronic merchants appreciate that customers are most likely to buy products and services from Web sites in their native tongue.

And increasingly, that language isn't English. International Data Corp. in Framingham, Mass., projected that by 2001, 60% of Internet users and 40% of e-commerce revenue will come from outside the U.S.

How can a company quickly capitalize on the growing global market without spending a fortune developing and updating multiple Web sites?

Enter Idiom Technologies Inc., whose Web content management software, WorldServer, lets electronic merchants maintain multiple foreign-language sites — and do it from a centrally managed, original-language site.

Human Required

Idiom's product itself performs no translations — you still need a human being for that. Rather, WorldServer tracks text that needs to be translated and inserts the translations into multiple-language sites.

According to Idiom founder and CEO Eric Silberstein, automating that process can cut the cost of launching and maintaining a multilingual, online presence by as much as 80%.

Using Extensible Markup Language, WorldServer works by inserting tags, or placeholders, where text appears on a site. When the text in the master version changes, the WorldServer software automatically sends notices to foreign-language editions of the site.

The notifications show exactly where new text needs to be translated and inserted. The software also automatically embeds newly translated text in its proper place on Web pages.

Silberstein, a 1998 Harvard graduate, came up with the idea while working at Microsoft Corp. in Beijing the summer before his senior year of college.

There, he observed that his Chinese colleagues who could speak, read and write English nevertheless ignored Web sites in English.

In his work getting traditional Microsoft software products ready for the Chinese market, Silberstein also learned that identifying and tracking new text that had to be translated is very much a repetitive, batch-oriented process — and one that could benefit significantly from automation.

The main challenge of Web-site globalization is what Silberstein describes as an inherent communication gap between Web developers and language translators.

Web developers are experts in building and operating a site, while translators understand the culture and thus know how a foreign-language site should look and feel. The idea behind WorldServer is to marry those separate areas of expertise in a highly automated, nonintrusive manner.

There are two alternatives: developing and maintaining parallel sites — one for each language or country in which a company wants to sell goods online — or manually extracting content for translation, translating it and then reinserting it on those parts of a site that are multilingual.

Those alternatives are neither pretty nor cheap.

Back to America

Silberstein returned to the U.S. to launch Idiom — and to graduate from college — in January 1998. Since its founding, Idiom has grown to a company of 11 employees, all of whom speak at least one language besides English. Silberstein, for instance, is fluent in Chinese and Russian, while the company's director of services speaks Slovenian.

For now, Idiom's pricing depends on the size of a site. However, Silberstein says customers can expect to spend "in the six-figure range."

So far, the company has signed on three customers, including Chipshot.com, an Internet retailer of custom golf clubs and apparel that last week launched a Japanese-specific Web site to better attract that country's 27 million golfers.

The Japanese Chipshot.com site features "perfect-fit" customization technology that lets Japanese golfers design and order a set of golf clubs built for individual skills and physiques. It also has a bilingual service representative for Japanese customers.

CEO ERIC SILBERSTEIN: While working in China, he realized that automation could help the updating of multilingual text

Idiom Technologies Inc.

Web merchants can more easily — and cheaply — maintain multiple foreign-language sites with WorldServer

Location: 298 Western Ave., Suite 3, Cambridge, Mass. 02139

Telephone: (617) 492-1455

Web site: www.idiomtech.com

Business: Automating the tracking of text changes at multilanguage Web sites.

Why you should watch them: As e-commerce becomes increasingly international, the maintenance of parallel Web sites in multiple languages is an ever-increasing headache for webmasters and marketers alike.

Company officers:
- Eric Silberstein, founder and CEO
- Susan Cheng, co-founder and vice president of marketing
- Ken Shan, co-founder, chief technology officer

Milestones: Founded in 1998

Employees: 11

Product: WorldServer, software that uses XML to tag text that appears on multiple sites and notifies each local-language site when a change occurs on the master site.

Burn money: Funding provided by Greylock, Boston; North Bridge Venture Partners, Boston; and Sigma Partners, Menlo Park, Calif.

Customers: Chipshot.com

Getting your money's worth: The more you change your Web sites, the more you're likely to benefit from WorldServer.

Potential stumbling blocks: Tracking and tagging software can't actually make changes for you. Nor can it account for differences among target markets and cultures. And with a six-figure price tag, the product is way out of reach for many electronic businesses.

COMPUTERWORLD emerging companies

the buzz

STATE OF THE MARKET

What People Are Saying About Idiom . . .

No translation is needed to understand what's being said about Idiom Technologies' WorldServer – it's a winner

Think Globally, Act Locally

■ "Companies have been told that electronic commerce will eliminate national boundaries. But just because somebody can access our Web site from a different country doesn't mean they can make a buying decision," says **Nick Mehta**, vice president of marketing at Chipshot.com. "Getting people to take the plunge and buy online requires tailoring and localizing your Web site as much as possible to their style and way of thinking," he says.

Last week, the Sunnyvale, Calif.-based Internet retailer of custom and name-brand golf equipment and apparel entered Japan's $2 billion e-commerce market with a Japanese-specific site. "Without a solution like this, we would not have been able to jump into the Japanese market with a Japanese site as quickly as we did," Mehta adds.

In E-Commerce We Trust

■ "The threshold of trust required for online commerce is one of the highest in the online environment," says **Preston Dodd**, an analyst at Jupiter Communications Inc. in New York. Speaking to users in their own language "creates an element of greater trust," he says. "The whole translation space is relatively immature, and we'll see a lot of competition and companies scrambling to address the area. [Idiom] has an advantage of being an early entrant and being nimble."

Angelo Santinelli, a partner at North Bridge Partners, agrees. His company was one of three that invested a total of $5.25 million earlier this year in first-round venture capital financing of Idiom. "We recognize the market potential for an effective Web globalization solution," he says.

Laying the Foundation

■ "What drives their product is extensions to HTML," says **Steven McClure**, an analyst at International Data Corp. in Framingham, Mass. "They don't actually translate a site as much as lay down the structure so things that need to be translated can be translated. They seem to have a well-thought-out strategy."

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Color Screens Give New Handhelds an Edge

BY DAVID ESSEX

IF YOU'VE admired others' handheld electronic organizers but haven't felt compelled to buy one yourself, the gorgeous color screens on the latest crop might sway you. Those screens aren't just more PC-like than their monochrome predecessors: Some are comparable in clarity and brightness to the best notebook displays. That color costs around $250 extra — well worth the money if you find monochromes to be too dark and dull for heavy use.

The new, color-enabled version of Microsoft Corp.'s Window CE operating system for handheld devices also has a strong corporate story to tell.

In addition to the color display, it now offers built-in programming tools for custom applications like sales force automation, corporate phone directories and inventory databases. Although Palm Computing Inc. devices and their ilk are still used mostly as notetakers, calendars and contact managers, color makes those applications much easier to look at for long periods.

Color also adds a multimedia dimension, bringing graphically rich games and video to the platform. Businesspeople can use the improved graphics for things like small-scale sales presentations, databases that contain pictures of goods for sale (such as real estate) and Web browsing.

Palm Computing, a subsidiary of 3Com Corp., started the handheld computing phenomenon in the mid-1990s. It still claims more developers, applications and peripherals than any other — so if you're looking to organize your life around a personal digital assistant (PDA), the Palm is a great place to start.

But Windows CE is coming on strong: Major vendors like Compaq Corp. and Hewlett-Packard Co. waited for color before launching their first palm-size handhelds and the developer list is growing daily.

3Com won't reveal whether it will offer a color Palm.

The coming year will bring more digital cellular support, Web browsing functionality — and even ad hoc wireless networks, based on upcoming Bluetooth technology, which will provide a standard way for devices to recognize and communicate with each other. Multimedia content and related hardware should proliferate; Casio Inc., for one, is talking about a color video camera that will plug in to a handheld device's Compact Flash slot.

I tested three of the first units available with the new Windows CE, trying the onboard and bundled CD software, synchronizing contacts and appointments with Microsoft Outlook on my PCs and transferring files.

My favorite was the Casio Cassiopeia E-100, which has the brightest, sharpest screen and the most multimedia features. A close second was the well-designed Compaq Aero 2100, followed by the Hewlett-Packard Jornada 420, which has less power and fewer features than the other two and inferior screen technology. ■

Essex is a freelance writer in Antrim, N.H.

COMPAQ'S SLEEK, silver-and-black Aero 2100 gets points for style and ergonomics, but the Casio model has the edge in overall functionality

Casio Cassiopeia E-100

Casio Inc.
www.casio.com
$499

Given Casio's reputation for building quality consumer gadgets, it isn't surprising that the Cassiopeia E-100 blows away the others I reviewed with a better screen, more processing power and storage and multimedia extras that should appeal to businesspeople who regularly use color photographs, dictate memos and listen to recorded information during their workday. The E-100's screen wows with its always-on backlighting and 65,000-plus colors (the others offer only 256). A customizable interface lets you place your favorite applications, like the video player, close at hand. As with the Compaq (but not the HP), there's also an image viewer and a utility for playing MP3 audio files.

MP3 also provides access to recorded business news and analysis from Web sources like National Public Radio, *The Wall Street Journal* and *Harvard Business Review*.

The E-100's 131-MHz processor is the fastest in the group, yet its more graphically rich interface loads applications slower than its competitors. And I'm not crazy about the poorly labeled controls, though the four-direction cursor pad is neat. Its rugged, metallic-looking casing, relatively powerful configuration and amazing multimedia toys make the Cassiopeia E-100 the clear winner in this group.

Compaq Aero 2100

Compaq Computer Corp.
www.compaq.com
$499

Compaq's sleek, silver-and-black PDA has the best ergonomics of the three. The Aero 2100 has only two buttons on its left edge: an escape button and a combination selection wheel and "Enter" button that can be rolled up and down to scroll through screens. Four clear, icon-labeled buttons on the front bring you directly to calendar, to-do list, contact and notepad applications; a big "On" button doubles as a backlighting control.

Like the E-100, the Aero 2100 has an active-matrix, thin film transistor screen that is even sharper than the uneven, passive-matrix display on HP's Jornada. But Compaq decided to use power-saving sidelighting instead of backlighting, which provides great outdoor viewing but makes the screen look dim even at the highest setting — a bad design choice in my book. The 70-MHz processor is the slowest of the three, and the Aero 2100's seven to 10 hours of battery life is only slightly better than those of the other two devices, which have much brighter displays.

The Aero 2100 comes with VCA Systems GmbH's Expense Tracker, which transfers to the unit from a CD. It also has the same Audible Content Player as the E-100 for reading downloaded books and periodicals. I'd buy the Aero for its superior usability and design if the Cassiopeia didn't have such fun multimedia tools and if my job entailed a lot of travel expenses and work outdoors.

HP Jornada 420

Hewlett-Packard Co.
www.hp.com
$519

Although it comes bolstered with CD software — including an Inso Corp. file viewer and a 30-day trial version of Intuit Inc.'s Quicken Expense-Able — and support for Motorola Inc.'s upcoming FLEX Pager (which brings wireless messages to the PDA), the Jornada is inferior to the others in most respects. It uses older, passive-matrix screen technology that produces streaking, blurring and uneven brightness; has the second-slowest processor at 100 MHz; and the lowest standard RAM and ROM configurations (8M bytes for both), which leave less room for programs.

The Jornada does boast extra screen friction, which gives notetaking a more realistic feel, and a flip-top screen cover. Its backlight is always on, but you can set it to three preset levels and turn off Windows CE sound effects to save the camcorder-style battery's juice.

Still, I can't recommend buying the HP when you can get the Casio or Compaq for less.

Secure Sockets Layer

BY CAROL SLIWA

NETSCAPE Communications Corp. recognized the need for a secure way to transmit data over the Internet. So the company came up with an answer — Secure Sockets Layer (SSL) — and built it in to its first Web browser.

SSL is a security protocol that protects communications between any SSL-enabled client and server software running on a network that uses TCP/IP, a set of protocols that the Department of Defense developed to link different computers together.

It's most commonly used to secure data being exchanged between Web browsers and Web servers. The security protocol's main purposes include the following:

- To authenticate the server so users can be sure they're at the Web site they want to visit.
- To create a secure pipe so information that's sent between the browser and server is encrypted, or scrambled, to prevent hackers from tampering with the data during its transmission.

Web users can tell when they've reached an SSL-protected site by the "https" designation at the start of the Web page's address. The s added to the familiar HTTP — the Hypertext Transfer Protocol — stands for *secure*.

Users don't have to do anything to trigger an SSL connection. The client portion of SSL is built in to the Web browser; most sites simply require a password or log-in number to verify the user's identity.

Companies that conduct business via the Internet need to contact a certificate authority, such as VeriSign Inc., which is a third-party organization that confirms a company is indeed what it claims to be. Once that's complete, the company can set up its Web servers for SSL connections.

Companies need to be selective about which Web pages they choose to protect. That's because they will need more server processing power to handle SSL-secured data transmissions than they do to deliver the standard, unsecured Web page.

"SSL can bog down the server," says Ted Julian, an analyst at Forrester Research Inc. in Cambridge, Mass.

Other issues are also cropping up. "People just want SSL to do more than it's supposed to do," says Taher Elgamal, who pioneered the SSL effort when he was chief scientist at Netscape. He's now president of Kroll-O'Gara Co.'s Information Security Group, a professional services company in Palo Alto, Calif.

"When you have a database behind the Web site, people want the SSL [protection] to go all the way back to the database," Elgamal says. "SSL just does not do that."

SSL protects the data while it's being transmitted from point to point — most commonly between Web browser and Web server. Once the data arrives at it's destination, it's no longer secure.

Are there technologies or issues you would like to learn about in QuickStudy? Please send your ideas to QuickStudy editor Stefanie McCann at stefanie_mccann@computerworld.com.

DEFINITION

Secure Sockets Layer (SSL) is a protocol that protects data sent between Web browsers and Web servers. SSL also ensures that the data came from the Web site it's supposed to have originated from and that no one tampered with the data while it was being sent. Any Web site address that starts with "https" has been SSL-enabled.

Q&A From the Developer

Taher Elgamal, one of the developers of Secure Sockets Layer, recently spoke with *Computerworld*

Elgamal: For transactions, 128-bit encryption is best

What is SSL's primary use?
It is used in virtually all the encrypted e-commerce credit-card transactions today.

What does SSL consist of?
It's both the handshake – the negotiation that convinces the browser and the server that they both support the methods that they agreed on – and the secure pipe.

Who's responsible for setting up an SSL connection?
Business. If you are talking to Bank of America or to Amazon.com and they think that a particular transaction deserves to be secured, then they will actually set up the Web page in a way that would tell the browser, "This is a secured page," by naming the page [with the] "https" [protocol] instead of "http."

What is the recommended level of encryption between the browser and server?
128 [bits] is the recommended number. It's how many random bits are in the key. If somebody were to break this, they would have to guess all 128 bits, and that really does take a long time. The higher the number of bits, the more difficult it is to break. It goes up exponentially fast.

What's the recommended length for the server's public key?
The minimum recommended value by the security community is 1,024 [bits].

How much work is involved in SSL enabling a server?
Nothing. Just call up VeriSign and get a certificate, and you switch. There is one software switch. It's very simple. It doesn't take any work at all.

What's the most common complaint about SSL?
Speed. Performance at the server side, because between a server not doing anything and the server encrypting, of course, [you need more horsepower]. So most of the time, you end up having to spend more money at the server to have it encrypt.

MORE ONLINE

For more information about Secure Sockets Layer, visit our Web site www.computerworld.com/more

How SSL Enables Secure Connections

Secure connections are vital to e-commerce, enabling secure online banking, other electronic business and any transactions that require security.

Request for SSL Session

A user visits a Web site that has a Web address that starts with "https." The "s" indicates the server is requiring SSL for the session.

Software Handshake

The user's browser and the Web site's server begin a negotiating process, known as the handshake.

A. The server presents to the browser its public key – which has been certified by a trusted authority, such as VeriSign Inc. The browser validates the server's certificate.

B. The server tells the browser how many bits will be used to encrypt, or scramble, the data. The recommended number is 128 bits.

Secure Connection

Data is exchanged via a secure pipe, which prevents an intruder from seeing or tampering with the data. A data integrity check ensures that the data hasn't been changed while being transmitted from browser to server, or vice versa. Once the data arrives at the browser or server, it's no longer secure.

DISAS

Hurricane Andrew demonstrated the brute force of nat

IT managers who have hit nature's curveballs share what they learned when hurricanes, floods, tornadoes and other calamities tested their disaster recovery plans By Alan Radding

STER!

DISASTERS that can knock you out of business needn't be the once-in-a-ceotury earthquake or hurricane. Some imbecile could throw the wrong switch at Anyplace Edison and cut off power to your half of the city, putting you out of business just as easily as the next Hurricane Igor — and with no advance warning.

A disaster can be very costly if critical prodoction systems are knocked out of operation. Losses could hit $6.5 million per hour in the case of a brokerage operation, $2.6 million per hour for a credit-card sales authorization system or a mere $14,500 per hour in automated teller machine (ATM) fees if an ATM system is shut down, according to a published report from Strategic Research Corp., a Santa Barbara, Calif., market research and consulting firm. Whatever the amount, it hurts.

Despite the frequency of disasters and the pain they can inflict, 15% of large companies surveyed in a recent report by research firm Gartner Group Ioc. in Stamford, Conn., lack a disaster recovery plan. Many others have a plan but haven't tested it.

But as the organizations profiled bere have discovered, disasters rarely fit a plan and can reveal a major flaw in the organization's preparations.

Allan Graham, senior vice president of operations at Comdisco Inc., a continuity services vendor in Rosemont, Ill., says many organizations encounter at least one of the following problems during a disaster recovery operation:

- **Equipment unregistered at the hot site (the alternate operations site):** Companies arrive at the hot site but haven't updated their contract for devices — usually new devices — they need at the hot site since last testing their recovery plan. That can be a showstopper because the necessary technology won't be there.
- **Cumbersome logistics:** Moving people and tape media with no advanced notice during a crisis turns out to be more of a scramble than during a test scheduled long in advance.
- **Unauthorized software:** Arrangements for software license transfers to the recovery site are incomplete, leaving the recovery team without a working software key.
- **Slow telecommunications circuit rerouting:** Organizations that test only a subset of their lines find carriers can't reroute all the circuits fast enough.

Or, as the experience of information technology managers shows, you may find that the little things — or even sheer luck — make the difference betweeo a swift and smonth recovery or a long struggle back to systems health. The little things may be nothing more than a serendipitous communications link or a cooperative vendor willing to jump your emergency order to the front of the queue — things not likely to be considered in even the most exhaustive disaster recovery plan.

Computerworld asked four IT managers to share their disaster recovery experiences and offer advice to their peers.

FLOOD PRODS NT MOVE

Heavy rain in Florida isn't unusual. Still, receiving more than six inches of rain in 48 hours was a lot, even by Florida standards, says Landstar CIO Bob Luminati. But rain didn't seem too dangerous until an estimated 150 tons of water, which had pooled on the data center roof and the rooftop air conditioning unit, caused the roof to collapse onto the building's second floor.

Company: Landstar Systems Inc., Jacksonville, Fla.; a network of 6,000 independent truckers

Impacted systems: IBM AS/400, NetWare and Windows NT networks

Backup: Computer Associates International Inc.'s ARCserve and Hewlett-Packard Co.'s digital linear tape library

Key vendors: HP, IBM

Primary problem: Restoring IT operations

Response: The night operator managed to make one emergency call to John Higbe, Landstar vice president of IT, alerting him to a water leak before becoming aware of the full impact of the catastropbe one floor above. By 4 a.m. on Feb. 17, 1998, Higbe was retrieving the AS/400 backup tapes, while Ken Dreon, manager of network services, scrambled to rescue the backup tapes of the network servers.

Luminati, who was alerted of the emergency at home, initiated the company's disaster plan. With multiple phone lines, Luminati's home became disaster central, while Dreon and Higbe managed the salvage operations at the site.

"All our voice and data communications were on that first floor. All we had left were about 10 cell phones," Luminati recalls.

By 7 a.m., Landstar corporate officers had been alerted. Fortunately, the company operated two other data centers in Kentucky and Illinois. With truckers continually calling in from the road, Landstar directed its telephone carriers to reroute all calls to the operating data centers. Similarly, field sales agents, relying on store-and-forward technology deployed several years earlier, could continue unhampered.

With essential operations resumed,

The support from all the vendors was incredible.

BOB LUMINATI, CIO, LANDSTAR SYSTEMS

JEFFREY CARP

the disaster team shifted its attention to restoring the Jacksonville center. Dreon borrowed a router and brought up the wide-area network in another building on the corporate Fiber Distributed Data Interface ring.

The company called HP, its server provider, and arranged overnight shipment of new servers. IBM sent a new AS/400, while IBM's engineers moved the old one into the parking lot, where they worked on it using industrial-strength blow dryers.

The team decided not to restore the Novell network but to accelerate a planned yearlong migration to Win-

Disaster, page 72

Getting the software license transfer is a big pain in the neck. I had to swear on a Bible 20 times to get software clearance.

JOE GOWDER, DIRECTOR, DEGUSSA CORP.

Continued from page 71

dows NT. The company immediately ordered 150 thin-client devices and restored the network for NT. "We got the data converted in 36 hours," Dreon reports. It took a few more weeks to set up all the workgroups and permissions for the new NT network.

Long-term impact: Since the disaster, Landstar has established full mirroring among its data centers and redundant switched links.

Primary lesson: Stay on good terms with your vendors. "HP got us servers in 15 hours. The support from all the vendors was incredible," Luminati says. That kind of support wasn't written into any disaster plan.

LIGHTS OUT

It seemed so trivial at first. A pipe broke in the men's room on the 23rd floor of Schwab's Montgomery Street office in San Francisco on Friday morning, Feb. 26, 1999. However, the water pipes and the building's main electrical bus shared the same channel. Water saturated the electrical bus, shorting out the electrical system and forcing the evacuation of 550 people, recalls Tanya York, Schwab vice president of business resumption services.

Company: Charles Schwab & Co., San Francisco

Impacted systems: A variety of workgroup and departmental file servers; workstations

Communications: Autodialer, voice mail, cell phones, employee hot line

Key vendors: Dialogic Corp. (Communicator), NexTel Communications Inc. (radio phone)

Primary problem: Notifying staff

Response: Nobody knew the extent of the damage. When word arrived on Saturday morning that the electrical service wouldn't be restored by Monday, most people were gone for the weekend. In fact, it took another week to dry the electrical bus.

"By Monday morning, we had to have everybody in a new place," York recalls.

Fortunately, Schwab, which has been growing at 20% per year, maintains a large amount of space in San Francisco. "We were lucky. We turned up over 1,000 workstation spaces because of all the moving that had been going on anyway," York says.

The challenge Schwab faced was to notify everyone during the weekend about where they should report for work. The company turned to the Dialogic Communicator, a PC-based, script-driven automated dialing system; voice-mail broadcasts; NexTel radio cell phones; and the employee telephone hot line.

Starting Saturday morning until midnight, the dialer tried to reach all 550 Schwab employees and alert them to the need to get into the office on Sunday to retrieve up to two boxes of office items as well as direct them to new offices.

Long-term impact: Expanded usage of NexTel radio phones.

Primary lesson: Check your messages. "Getting through to people on a weekend is real tough," York concludes. The autodialer, voice-mail broadcasts and hot line were functioning, but employees still have to remember to check in.

HURRICANE WARNINGS

When word came that Hurricane Georges was heading for the Gulf Coast in August 1998, Degussa put its disaster procedure into effect. "By Friday, we knew it would hit on Monday — so we got started," recalls Joe Gowder, director of operations and technology. He didn't realize another potential disaster lay waiting at the hot site.

Company: Degussa Corp., Theodore, Ala.; a chemicals company

Impacted systems: AS/400, Novell and Windows NT networks

Backup: IBM 3590 tape drive

Key vendor: IBM

Primary problem: Ensuring rights to run software at hot site

Hot site: IBM

Response: The IT team backed up the company's AS/400 and shipped off the tapes to its New Jersey hot site. Later that weekend, Gowder and two IT staffers packed up their laptop computers and cell phones and headed to the hot site, where he found another potential disaster in the form of software licensing. "Getting the software license transfer is a big pain in the neck. I had to swear on a Bible 20 times to get software clearance," Gowder recalls. The software vendor just wasn't able to respond quickly.

"It was a nail-biter right through Sunday night," Gowder remembers. The weather forecasters weren't sure where the storm would make landfall. Gowder held off throwing the switch to shift operations to the hot site. The storm made landfall in Biloxi, Miss., 40 miles wide of Theodore. The AS/400

back home continued to operate. Phone lines remained intact. People at other Degussa sites tapped into the AS/400 oblivious to the 100 mile-per-hour winds lashing the building.

Long-term impact: With 30 to 40 warehouses dialing into the AS/400, rerouting calls to the hot site in time looked daunting. "We realized we had to call each warehouse to ask it to change the [phone] routing," Gowder explains. By the next disaster, Gowder says, he expects to have a frame-relay network in place. "Then, I will just call the carrier, give the new number and let the carrier do the switching," he says.

Primary lesson: Check your software licenses. Have the hot site's software key in your pocket before getting there.

TORNADO DAMAGE

"We have a couple of significant incidents o month," says Charles Wallen, vice president of business continuity solutions at Bank of America in Dallas. But most aren't like the tornadoes that hit downtown Nashville on April 16, 1998.

Company: Bank of America Corp.
Impacted systems: Check processing, lock-box processing systems
Key vendors: IBM, Comdisco
Primary problem: Continue processing of thousands of checks
Hot site: Comdisco
Response: With significant structural damage to the bank's operations center and its staff huddled for safety in the basement, the bank fired off alerts via its national blast-paging system. Those alerts activated a disaster response process in a well-rehearsed drill that dispatched teams nationwide to help.

Wallen, caught away from the office, spent two hours at a pay phone on a street corner in Dallas coordinating the recovery through conferences involving dozens of people. A set of large bridge lines, which enable clear communication among multiple locations simultaneously, handled the calls.

By 10 p.m., the company officially declared a disaster and shifted operations to Comdisco's Atlanta check-processing hot site. An advance team arrived in Atlanta a few hours later. Other actions included redirecting T1 circuits and coordinating the transportation and logistics entailed in moving staff to Atlanta. Within 36 hours, the bank had processed 530,000 checks, a normal daily workload.

Long-term impact: The original Comdisco facility was too small; Comdisco has since opened a larger facility.

Primary lessons: Need better security access control at the hot site and better tracking of where checks are during transit.

Radding is a freelance writer in Newton, Mass.

ONCE BURNED

BY GARRETT MICHAEL HAYES

Some time after 10 p.m. on March 4, 1988, Los Angeles fire units began to gather around the base of the First Interstate Tower. Several thousand people normally spent their working day in what was then the tallest U.S. building west of Chicago. Like most of them, I was at home that evening, blissfully unaware of the fire that ultimately would consume four and a half of the tower's 62 floors, take one life, cost $450 million dollars and exile dozens of businesses for more than six months.

I would shortly be part of a team charged with pulling the pieces back together for several hundred First Interstate employees. The experience taught me that the lessons of disaster recovery are both hard-earned and easily forgotten.

Preparing your business to survive a disaster requires five key steps, which must be put into daily practice, eliminating reliance on human memory. Doing that isn't easy, but taking the time to consider critical business factors and inescapable human factors will create a disaster recovery plan that can work.

In an impressive show of what proper planning can do, many critical banking operations at First Interstate were back in service by the middle of the following day. Yet numerous back-office and administrative functions took months to recover.

THE ASSOCIATED PRESS

Assessment Isn't Enough

When approaching the problem of disaster recovery, the first thing businesspeople must confront is deciding what they can afford to lose. Too often, that decision is based on a theoretical assessment of data preservation rather than the real concerns of daily operations. Your customer history data is important but fairly useless if you don't have copies of the applications with which to manipulate that data.

A simple but effective way (used by some groups at First Interstate) to decide what elements are required for your business to survive is to simulate a failure. Decide what you think must be there, and then, in an off-hours exercise or with a representative setup, make everything else unavailable and see what happens. You may be very surprised at the results. In almost all cases, the planning process will have missed critical pieces for the conduct of your business.

Backup Isn't Enough

The starting point for any disaster recovery plan is, of course, backup. Having extra copies of your critical business data is a necessary starting point, but the plan must include such additional key elements as safeguarding those backups and providing for alternate operation sites.

One department, headquartered on a floor consumed by the fire, received an object lesson in the insufficiency of backup. Each employee was meticulous in creating duplicate copies of every critical document and economic analysis they performed. Following the fire, those backups were tiny piles of ash next to the larger piles of slag that had been their Macintosh workstations.

Other departments, which had made use of data storage and vaulting companies, recovered most of the information destroyed in the fire. For companies unwilling or unable to go to the expense of utilizing such services, provisions as simple as a safe-deposit box on the other side of town may suffice.

Recovery Isn't Enough

Insurance policies will cover the replacement costs of equipment, the price of installation and similar losses. What they won't cover is lost revenue as you execute your recovery plan. In most cases, you will need a two-stage plan, which allows for rapid resumption of key business, followed by a slower and more complete recovery. That requires the planner to provide for sources of equipment and alternate facilities to allow immediate business resumption.

As an example, the ability of the stock trading division to execute customer orders was an absolutely critical function, which First Interstate needed to be restored almost immediately. On the other hand, access to a customer's long-term historical trading data, though important, didn't have the same urgency. The plans appropriately provided for assigning resources to the most critical functions first. Customers, who could go elsewhere, would instead stay with the company while service was understandably reduced.

Planning Isn't Enough

The best-thought-out plan in the world is useless if it isn't followed or if it depends on things that don't work as expected. Those departments of the bank that experienced the greatest success at resumption were the ones that had actively tested their plan. Such tests are much more than just a follow-up to the sort of preplan testing to see what is and isn't critical. Instead, tests needs to start at ground zero, seeing the exercise all the way through.

Office fire drills are important, not because they train everyone to peak efficiency, but because they familiarize people with the route to take and highlight unanticipated problems, such as stuck doors or narrow passages. In exactly that same manner, recovery drills both familiarize people with the steps of the plan and reveal quirks – such as the need for that tape library driver software.

Memory Isn't Enough

Finally, it's simply not enough to remember that there's a plan. It has been said that a good scare is worth more than good advice. But how many of us emerge from some movie theater horror show determined not to fall victim to the same fate, yet get blithely into our cars without even checking the backseat for a hidden strangler?

In planning for resumption followed by recovery, the planners must understand that, even after a real disaster, people's appreciation of the risks will rapidly fade into the mists of daily need. Companies must be prepared to put procedures into place to ensure that people follow the plans for disaster preparation, not simply recovery.

"Once burned" may offer incentive to create a disaster recovery plan, but my experience taught me that the disaster alone won't motivate people to follow through on their plans.

Hayes is currently system controls manager at Client/Server Labs in Atlanta, o primary test lab partner for Computerworld. In 1988, Hayes was assistant vice president for PC coordination at First Interstate Bancorp.

Technology Happenings

- **Digital Equipment Corp.** delivers the PDP-11/20 family of 16-bit minicomputers.
- **Edgar F. Codd** of IBM publishes a paper describing a relational database.
- **Gene Amdahl** forms Amdahl Corp.
- **General Electric** develops the first flight-simulation programs for NASA.
- **Telemart Enterprises Inc.** starts a **computerized grocery store** in San Diego. Shoppers connect with a computer by phone to order groceries for delivery; the store is shut down when too many calls overload the computer.
- **Honeywell Inc.** acquires General Electric's computer division.

In Space

- **April: Apollo 13** astronauts splash down safely after a ruptured oxygen tank cripples the Moon-bound craft.
- **June:** Soviet spacecraft **Soyuz 9** lands; sets a record for manned space flight at 17 days, 16 hours, 59 minutes.
- **November:** The Soviet Union lands **Lunokhod 1**, a remote-controlled, unmanned vehicle, on the Moon.

Born in 1970

- **Queen Latifah** (Dana Elaine Owens), singer, actress
- **River Phoenix**, actor, who died in 1993
- **Andre Agassi** and **Gabriela Sabatini**, professional tennis players

Other Notables

- **Janis Joplin** (Oct. 4) and **Jimi Hendrix** (Sept. 18) both die, at age 27.

Joplin

Hendrix

- Alvin Toffler's book, ***Future Shock***, is released.
- President Nixon signs a law that in the next year will **ban cigarette ads** on radio and TV.
- **The Beatles** release their last album, *Let it Be*.
- **Best Picture:** *Patton*.

■ Flashback is produced with the assistance of The Computer Museum History Center in Mountain View, Calif.

Grocery Scanners Check In

1970

BY LESLIE GOFF

IN A KROGER'S supermarket just outside Cincinnati in early 1970, where the parking lot was full of gas guzzlers and consumer favorites like Apollo Space Treats and Gleem toothpaste lined the shelves, a conveyor belt in the checkout lane moved the American public into a new era.

It was there, in Kenwood, Ohio, that a pivotal test of supermarket scanning took place.

Two years earlier, Cincinnati-based The Kroger Co. and RCA Corp. had started jointly developing a coding system to identify products in a store by category and price. The product codes were represented symbolically by a bull's-eye, which could be read electronically by a prototype scanner. In the 1970 test, Kroger's employees put bull's-eye codes on every product. When customers checked out, they heard the scanner's beep instead of the usual "cha-ching" of the cash register. The test would precipitate the launch of an industry effort to develop a Universal Product Code.

"We did it to prove it could be done," says Robert Aders, who in 1970 became CEO of Kroger. "We were looking at how banks were beginning to scan transactions, and the idea had evolved to do this in supermarkets."

But just because Kroger's proved it could be done didn't make it a sure thing.

There were simply too many stores, products and food companies to permit the random development of symbols and scanners for each supermarket chain. The key trade associations — the Supermarket Institute, the National Association of Food Chains and the Grocery Manufacturers of America (GMA) — had already been pushing for the development of a universal technology. Now they began pushing in earnest. The survival of the modern supermarket depended on it.

"By the late '60s, you had to start finding ways to save money . . . because of competition," Aders says. "CEOs were starting to look at productivity measurements very closely."

The manufacturers had an incentive, too, notes Stephen Brown, general counsel for the Uniform Code Council in Lawrenceville, N.J., and author of a book on the development of the bar code, *Revolution at the Check-out Counter* (1997, Harvard University Press).

If each supermarket chain devised its own coding scheme, food manufacturers would be forced to choose between two equally disagreeable options: Develop special packaging, with store-specific labels, for each of their products or crowd each product package with numerous codes and symbols for all customers, says Brown, who was a GMA lawyer in 1970.

So in August 1970, several months after the Kroger's test, a legendary meeting took place. The presidents of the three grocer's associations summoned 10 CEOs — five representing supermarket chains and five from food companies — and issued an edict: "Either find a common code and a symbolic representation of it, or tell us you can't do it and we'll stop wasting our time on it," Brown recalls.

"That was very innovative," Aders says of the meeting. Historically, the grocery manufacturers and the supermarket chains were frequently at odds, he says.

But the approach worked. Within two weeks, the group — which was dubbed the Ad Hoc Committee on a Uniform Grocery Product Code — chose the management consulting firm McKinsey & Co. to lead the project. Committees were formed to come up with the coding system and symbol and to encourage high-tech firms to develop the scanners.

The bar code was chosen as the symbol. It was submitted by IBM and developed by George Laurer, whose work was an outgrowth of an idea patented by another IBM employee, Joe Woodland, in the 1940s.

When the Ad Hoc Committee released its specifications, NCR Corp. was the first to rise to the challenge and develop a product. On June 26, 1974, Marsh Supermarkets Inc. used an NCR scanner to "ring up" a 10-pack of Wrigley's Juicy Fruit gum in a store in Troy, Ohio — marking the first in-store use of a bar-code scanning system.

Even then, Brown says, the future that the bar code would ultimately enable — such as just-in-time inventory management and the ability to target customers by their brand preferences — was still unclear. Few people envisioned its application outside of the grocery industry, he says.

"I don't think we knew fully what we had in our hands," Aders agrees. ◗

By the time of this 1970s scene, scanners had begun to take some of the drudgery out of supermarket checkout lines

Goff is a frequent contributor to Computerworld. *Contact her at lgoff@ix.netcom.com.*

- **The Chicago Seven are found innocent of conspiracy to incite a riot at the 1968 Democratic Convention, but five are convicted of trying to incite a riot individually.**
- **Four Kent State students are killed by the Ohio National Guard during a Vietnam War protest on campus.**
- **More than 100,000 people demonstrate in the Wall Street district in support of U.S. involvement in Cambodia and Vietnam; none are killed.**

JANUARY FEBRUARY MARCH APRIL MAY JUNE JULY AUGUST SEPTEMBER OCTOBER NOVEMBER DECEMBER

- **President Nixon announces that the U.S. will send troops into Cambodia.**
- **The U.S. Senate repeals the Gulf of Tonkin Resolution.**
- **Nixon signs a measure to lower the U.S. voting age from 21 years to 18.**
- **The Environmental Protection Agency begins operations under director William Ruckelshaus.**

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BRET HOLLANDER, NETRECRUITER

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DAN HANYZEWSKI, MASTECH

Electronic Recruiting: Trends and Drivers
JOHN SUMSER, INTERBIZNET.COM

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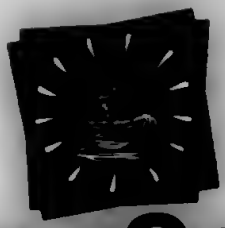

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Way To Go, Ohio

The IT opportunities in northern Ohio are booming, and area companies in Columbus and Cleveland are working hard to get IT pros to want to work and live there

By Emily Leinfuss

INFORMATION technology jobs have taken over the list of the 10 fastest-growing occupations in Ohio. The top three are computer engineers — whose ranks are growing at 103% per year — support specialists and database administrators.

Demand for IT jobs will continue to grow, says David Garick, director of the Bureau of Employment in Columbus. For example, the state expects to have more than 3,000 openings for programmer/analysts during the next few years, he says.

Ohio is bending over backward to fill those positions. Some state initiatives involve funding industrial training grants to upgrade workers' skills. It's also supporting the growth of industries such as transportation and warehousing in Columbus and has revitalized Cleveland to make it a major sports and entertainment destination, Garick says.

Best-Kept Secret

Columbus may be one of the state's best-kept secrets, says Chuck Elgin, senior vice president of systems development and architecture at Chase Manhattan Mortgage Corp. in Columbus He says the Columbus workforce is stable and white collar, but the city is moderate in terms of being on the bleeding edge of technology. That can make it hard to find IT professionals with advanced skills.

Elgin is looking for object-oriented developers in particular. "We have to recruit nationally and pay a premium," he says. One recruitment aid: the Columbus Chamber of Commerce's "road show," which visits large U.S. and Canadian cities to convince people that ceotral Ohio is a great place to live and work.

Keeping good people is a priority at Chase, Elgin adds. To boost retention, the company is adding on-site child care, accelerating raises on an as-needed basis to make sure IT salaries are equitable, and making regular salary market adjustments, he says.

At Ashland Chemical Co., a manufacturer and major distribution company, Vice President of IT Gloria Keesee plans to meet the challenge of a growing distribution business with technology. "We are looking at using e-commerce to handle the sheer volume of transactions and update our distributioo systems," she says.

Keesee is searching for ways to increase recruitment and retention. She brought a full-time IT recruiter on board, developed a rewards and recogoition program, increased the hours and cash available for training and went to a business-casual dress code, mostly io pursuit of good IT workers.

Cleveland Boom

Io Cleveland, IT opportunities are booming along with the economy. Even as the need for year 2000 skills fades, the demand for e-commerce and object-oriented development skills is accelerating, says David Sacco, MIS manager at Alcan Aluminum Corp.

Alcan, like other manufacturers in Cleveland, has embraced technology as critical to its future. "The soft technologies such as ERP [enterprise resource planning] and Internet-based initiatives are becoming more of a factor in improving productivity," Sacco says. As a result, skilled Oracle and SAP developers are in heavy demand. To compete on an even playing field, last year Sacco commissioned a study of pay in hot markets like Atlanta. "As a result, we realigned some of our jobs with market indicators," he says.

The requirements for IT professionals may not be any different in Cleveland than other places, says Tony Pizzelanti, vice president of IT at M. A. Hanna Co., a specialty chemicals company. "We look for people who have a good, functional knowledge of the business we're in and the technologies we work with," he says. Those include ERP systems and the technical infrastructure skills that go along with them, like database administration. Good database administrators can earn from $60,000 to $85,000, and network professionals can earn $55,000 to $75,000. If they're management level, add another 10% to 15%, Pizzelanti says.

Aware of the growing need for IT talent, Pizzelanti also works hard at retaining employees, using pay-for-performance packages and other incentives. With demand high throughout Ohio, IT workers in Columbus and Cleveland are likely to be appreciated by employers who will go to great lengths to keep them around.

Leinfuss is a freelance writer in Sarasota, Fla.

Cash in Cleveland

IT hiring managers report these average annual 1998 salaries:

JOB TITLE	YEARS OF EXPERIENCE 1-2	3-4	5
Project manager, systems and programming	$[illegible]	$[illegible]	$70,000
Senior systems analyst	$[illegible]	$[illegible]	$[illegible]
Senior systems programmer	$[illegible]	$[illegible]	$[illegible]
Senior programmer/analyst	$[illegible]	$[illegible]	$[illegible]
Programmer/analyst	$[illegible]	$[illegible]	$[illegible]
PC technical support specialist	$32,000	$38,000	$42,000

SOURCE: COMPUTERWORLD'S 1998 MIDYEAR SALARY SURVEY

CONV. & VISITORS BUREAU OF GREATER CLEVELAND

As Places to Live and Work, Cleveland *and* Columbus Really Rock

You may not be able to get tickets to see the Cleveland Indians play at Jacobs Field But if you had them, you could walk to the stadium from work, take a long lunch and enjoy a couple of innings of a day game.

That's what Tony Pizzelanti does occasionally when he takes time out from his job as vice president of IT at M. A. Hanna, a specialty chemicals company in Cleveland. Both Cleveland and Columbus are renowned for being clean and safe and offering a real Midwest sense of value and quality of life.

The only consistently mentioned downside is the weather. "We definitely have a winter," says Gerald Filler, information systems executive of computer operations at Progressive Insurance in Cleveland. "We just prepare mentally for it – and we make the best of our beautiful summers."

"In Columbus, the cost of living is moderate, the environment is clean because there isn't a lot of heavy industry and the economy is stable," says Chuck Elgin, senior vice president of systems development and architecture at Chase Manhattan Mortgage. Elgin warns that if you're looking for the fast lane, Columbus isn't your speed. "Younger folks who are looking for night life and [who] want to see the world need to go to New York or Los Angeles. If you want to settle down, have a reasonable cost of living, good schools and be part of a vital community, then come to Columbus."

Cleveland is mostly appreciated as a safe city with a balanced economy, says David Sacco, MIS manager at Alcan Aluminum. Unlike other metropolitan areas, Cleveland "is very affordable and offers all the advantages of a large city with much less of the disadvantages," he says. – *Emily Leinfuss*

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Oracle Financials	**Teradata**	**ACF2/RAC-F/Firewalls**
Developer 2000	**C/C++**	**Software Quality Assurance**
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Programmer Analyst - SAP Specialist: Structured systems analysis, process engr'g, design, configuration, prototyping, develpm't, testing, QA, implementation, integration, maintenance & knowledge transfer of SAP R/2 & SAP R/3 systems for business, finc'l, banking, mfrg & other commercial application systems in a multi-hardware environ. using centralized or distributed Relational Database Mgmt Systems (RDBMS), Fourth Generation Languages (4GLs) & other GUI (Graphical User Interface) front-end tools. Req: B.S. in comp. sci., sci. or engineer'g (or equiv.) & 1 yr exp in job offered or as programmer analyst/systems analyst. Must have appropriate combination of skills as follows: 1 of A & 2 of B, or 2 of A & 1 of B, or 3 of A, or 2 of B. A includes FI, CO, AM, SD, MM, PP, QM, PM, HR, PS, WF, IS, BS. B includes ABAP/4, Screen Painter, Menu Painter, SAP Script, Correction/Transport, Data Dictionary, Function Modules, User-Exit Routines, SAP Installation. High mobility preferred. (Multiple positions) 40 hrs/wk. $56,615-$75,000. Report/submit resume to Ron Marsh, Allegheny Job Ctr., 3 Kensington Sq., New Kensington, PA 15068. JO #7050450

Software Engineer: 40 hrs./wk.; 8-5. $50,000/yr. Designs factory layout software in AutoCAD using C++, MFC & ARX in Windows NT. Designs applications using ARX & Visual C++ to create smart objects for AutoCAD in Windows NT/95. Implements software applications using Visual C++, ARX, MFC, & STL. Implements database connectivity between AutoCAD & Oracle in Windows NT & on-line help system in UNIX & Windows NT. Designs graphical user interface using Visual C++ & MFC. Designs & documents projects & researches & sources new tools, technologies, & procedures for adaptation to employer's software development. Requires Master's in Comp Sci. 3 year's commercial software development experience using C++ in Windows & UNIX environments. 1 year's experience in Object-ARX, MFC, Visual C++, STL, Oracle database, ODBC & OOAD using UML. Must have proof of legal authority to work in the United States. Send resumes to Iowa Workforce Center, 122 Kellogg, Ames IA 50010-0410. Refer to Job Order IA1100884. Employer paid advertisement.

Business Application Analyst

Evaluate business problems and recommend information systems solutions. Gather data and assess business problems. Assist in the development of alternative solutions and apply financial risk analysis to formulate recommendations. Serve as liaison between technical and user group. Provide business and technical expertise to technical and user groups to recommend best information systems alternative. Develop information systems that permit standardization of methods, procedures, equipment, and facilities. Schedule projects and provide performance reporting to ensure deadlines and objectives are met. Develop functional specification and conceptual system designs in UNIX or MVS operating environment from which programs will be written. Coordinate user acceptance testing prior to implementation. Maintain prioritization of problem logs and work requests throughout project. Assist in implementation and follow-up of recommended facilities, computer systems, equipment, processes and procedures. Define service enhancement and cost reduction opportunities. Analyze and revise existing logic difficulties and documentation.

Requirements: Master's or foreign degree equivalent in computer science, business, or related quantitative field, plus one year of experience in offered position or in programming, and/or business or database analysis and design and/or object-oriented analysis and design. OR bachelor's or foreign degree equivalent in computer science, business, or related quantitative field plus two years of experience in offered position or in programming and/or business or database analysis and design and/or object-oriented analysis and design. Stated experience must have included either distributed systems, client/server technology, object oriented development or CASE tools.

Salary: $50,484/year. 40 hrs/wk. M - F 8:30 a.m. - 5:30 p.m. Position located in Memphis, TN. Job Order #TN6201070. Submit resumes to Barbara Galloway, TN Department of Employment Services, 500 James Robertson Parkway, 11th Floor, Nashville, TN 37145-1200.

Senior Programmer Analyst

Plan, schedule and direct preparation of computer programs. Consult with personnel to clarify program intent, identify problems, suggest changes and determine extent of programming required. Assign, coordinate and review work of project team members. Develop programs from workflow charts or diagrams and convert workflow charts to language processable by computer. Design object-oriented computer software systems using C and C++, UNIX and Oracle database in a client/server environment. Gather user requirements to prepare specifications. Serve as project leader for software development projects, including providing technical direction on preparation of specifications, system test scripts and documentation, program and data record specifications, test specifications and general documentation, system flowcharts and logic diagrams, and coding, debugging, documentation and testing programs. Requirements: Master's (5 years of college) or foreign degree equivalent in computer science, MIS, math, engineering or related field, plus 4 years of experience in offered position or in design and/or development of computer software in a client/server environment, OR bachelor's (4 years of college) or foreign degree equivalent in computer science, MIS, math, engineering or related field, plus 5 years of experience in offered position or in design and/or development of computer software in a client/server environment. Stated experience must have included at least 2 years with C and/or C++, 2 years with UNIX and 1 year with a relational database management system (Oracle, SQL-Server, Sybase). $58,908/yr. 40 hrs/wk. M - F, 8:00 a.m. to 5:00 p.m. Position located in Memphis, TN. Job order #TN201086. Submit resume to Barbara Galloway, TN Department of Employment Services, Job Service Program and Technical Support, 500 James Robertson Parkway, 11th Floor, Nashville, TN 37245-1200.

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SENIOR SOFTWARE DEVELOPER Design and develop client/server applications in open environment including designing and developing GUI and database performance analysis and designing, developing and testing, installing and maintaining customized systems. Analysis, design, development and implementation of three-tier object oriented client/server communication systems. Analyze and design business processes through data modeling and process modeling. MS in Computer Science with knowledge of UNIX, TCP/IP sockets, C, C++, Java, and Oracle. Ability in GUI development using HTML and shell scripts, perl, awk and CGI. Good communication skills. 40 hrs/wk (9:00 a.m. to 5:00 p.m.) $63,000/yr. Send (2) copies of your resume to Case #19981501 PO Box 8968 Boston, MA 02119

Programmer Analyst - North Haven CT Analyze user req design develop test & implement Database & Data Warehousing sys using ORACLE 7 PL/SQL Pro*C Pro Cobol SQL*Plus & Developer 2000 Req Bach in Comp Sci Math or any Eng degree & 2yrs exp M-F 8AM-5PM 40 hrs/wk $75,000/year Send resume & cover letter documenting minimum qualifications to Attn Job Order #3237063 Program Support 3rd Fl Connecticut Dept of Labor 200 Folly Brook Blvd Wethersfield CT 06109 Applicants will be required to present proof of legal authority to work in the United States

Software Engineer Design and develop object oriented technology application software using tools/languages such as C, C++, Java, Unix Network relational and database management systems, GUI's. Work with SNMP to develop network management systems BS (comp sci, eng rel field/equiv) and 5 yrs exp (or 5 yrs exp as systems analyst/programmer) 40 hrs/wk. Send resume to Hiring Manager Software Experts, Inc. 83 Second Avenue Burlington, MA 01803.

SAP Consultants- (2 openings) Assist customer to select appropriate options within the SAP software. Customize the SAP software based on the options chosen by the customer, train its staff in the applications & use of SAP software. 40 hrs/wk, 8am-5pm $100,000/yr 2 yrs SAP consulting exp & knowledge of one or more SAP modules req'd. Must be willing to travel 100% of the time. Submit resume or C.V. to the Phila. Job Bank, 444 N. 3rd St. 3rd fl., Phila. PA 19123. Ref JO # 7050489 & JO# 8050554

SOFTWARE ENGINEER, ANALYST - PROGRAMMER Plans, develops, tests, and documents computer programs, applying knowledge of programming techniques and computer systems. Bachelor of Science in computer applications, engineering to math or science and two years experience in job offered required. Must be able and willing to travel. Two years experience required using Powerbuilder and MS Access. $75,000/year. Qualified applicants send resumes to Ambuhkar E. Thulyabai, President, Data Dynamics Systems, Inc. 4028 Dunwoody Park, Suite H, Dunwoody, GA 30338

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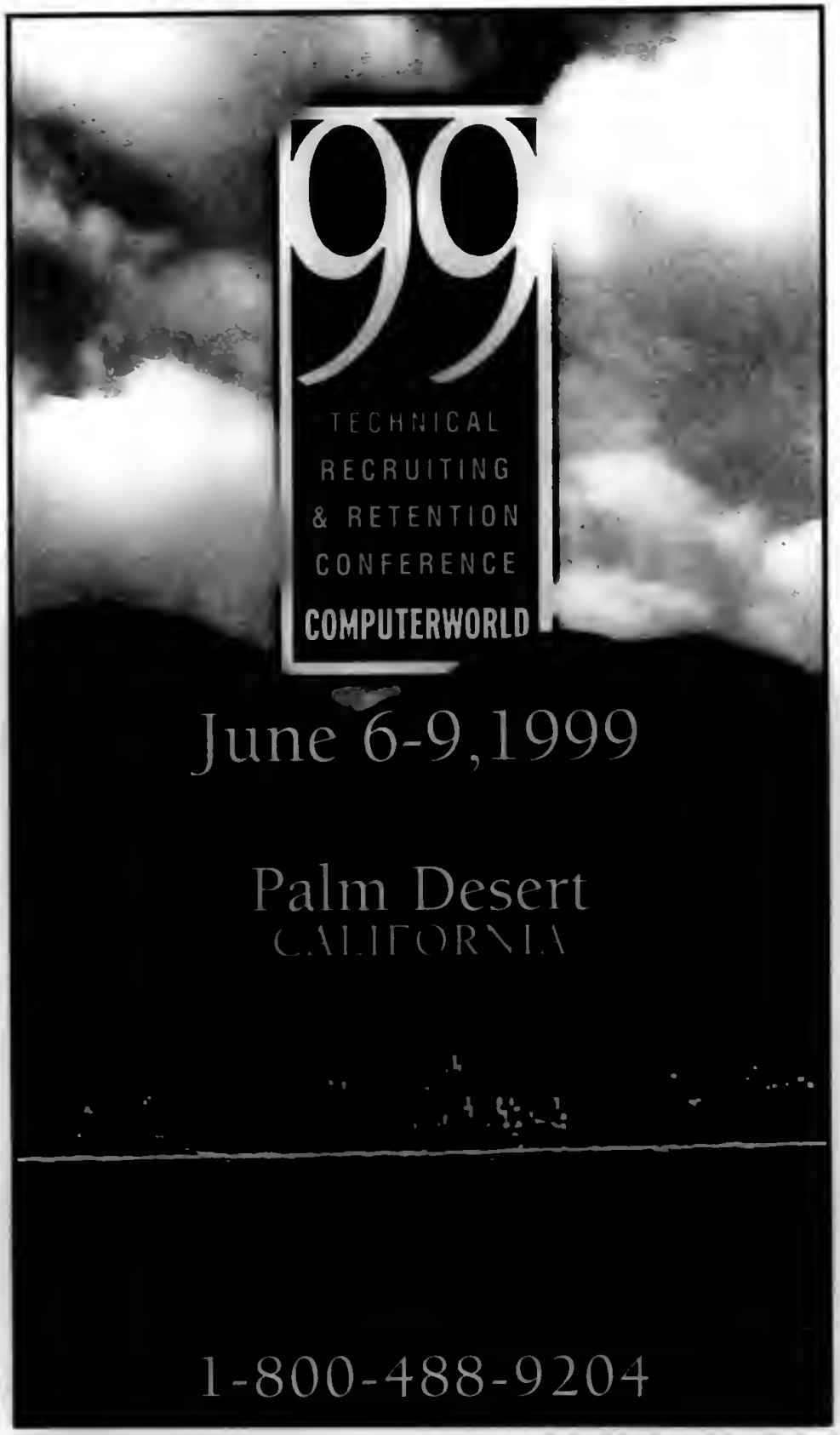

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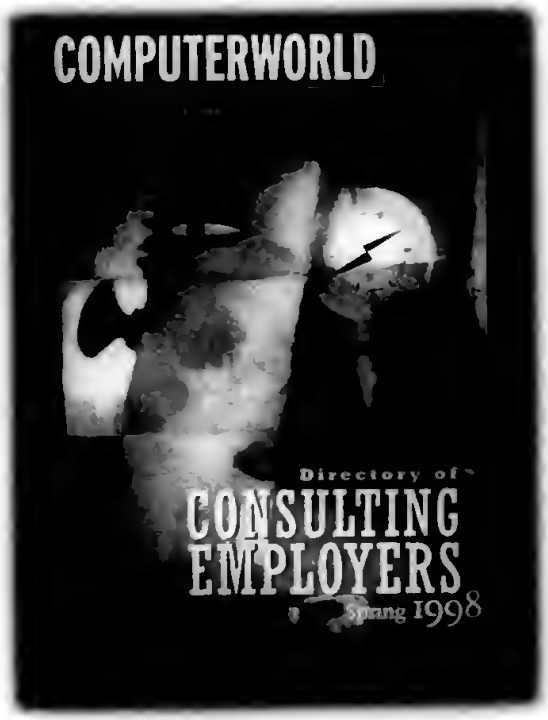

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Senior Software Engineer (2 openings) Design, develop and implement software systems to determine feasibility of design and directs software testing procedures, programming and documentation. Work involves extensive travel and frequent relocation. Must have one year of experience using: 1 of Group A and 1 of Group B and 1 of Group C; **OR** 1 of A and 2 of B; **OR** 1 of A and 2 of C as follows: Group A - Windows 3.1, Windows NT, Windows 95, Windows 98, Unix, HP-UX, IRIX, Sun OS; Group B - Visual C++, Visual C, C, C++, Visual Basic, PowerBuilder; Group C - JAVA, TCP/IP, HTML, MFC, CGI, Perl, ASP, COM/DCOM, Active X, MTS. Masters degree in one of several limited fields: Computer Sci/Appl, Eng, Chem, Math or Physics. Will accept B.S. degree with five years of experience as computer professional. Salary is $78,000 per yr, 40 hrs/wk, 9:00-5:00 p.m. Please submit resumes to Local Office Mgr., Pittsburgh South Job Center, 2100 Wharton St, Pittsburgh, PA, 15203. Job Order No. 7050457.

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Senior Programmer/Analysts needed to assess user needs & design, develop, implement & maintain appropriate software applications using various operating systems e.g. DOS, Windows 3X/NT, HP-UX, AIX, Linux etc. in various environments, e.g. Sybase 10/11, Java, C/C++, Java Script, PowerBuilder, HTML, CORBA, object oriented techniques and methodologies, use most current technologies & perform other duties as assigned. Sal @ $70,720/yr. Req's M.S. or Equiv. in Comp. Sci., Engineering or Rel. Field, knowl. of OMT & middleware (e.g. CORBA) as shown by completion of courses in the subjects or by one yr's exp. working w/them. Travel req'd. All interested candidates please send resumes to Jennifer Hanesson, Aerotek/Maxim Group, Inc., 7301 Parkway Drive, Hanover, MD 21076. Identify Ref. No. GOL 99-75478.

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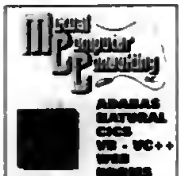
Computer Programmer Analyst Design and develop on-line systems and programs, write specifications, provide technical support services, develop and maintain databases and network distribution systems using DB2, COBOL, MVS/ES, CICS, and JCL. Bachelor's degree in Inf. Science, Engg. or Comp. Science plus 1 year exp in job or as programmer or software engg. 40 hrs./wk. $60,000/year. Must have proof of legal authority to work in the United States. Send your resume to the Iowa Workforce Center, 800 Seventh Street, Cedar Rapids, Iowa 52406-0729. Please refer to Job Order IA1100685. Employer paid advertisement.



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Compuware Corp.	10.7
The Vantive Corp.	10.6

DOLLAR	
Veritas Software Corp.	8.69
Legato Systems Inc.	6.00
Hitachi Ltd.	5.00
Sprint Corp.	4.75
American Power Conversion	4.50
Vitesse Semiconductor Corp	4.19
Lexmark International (H)	4.13
Intuit	3.44

PERCENT	
ETrade Group Inc.	-17.2
Manugistics Group Inc.	-17.0
PSINet Inc.	-15.6
Macromedia Inc. (H)	-15.0
Cybercash, Inc.	-14.5
Safegard Scientifics	-13.5
Cambridge Technology Ptnrs	-12.8
Globalstar Telecom. Ltd.	-11.0

DOLLAR	
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ETrade Group Inc.	-9.25
America Online	-8.75
PSINet Inc.	-8.00
Amazon.com	-8.00
Sapient Corp.	-7.88
Macromedia Inc. (H)	-7.00

INTERNET STOCKS STAY VOLATILE

And industry watchers say it ain't over yet

BY STACY COLLETT

CALL IT A MARKET gyration. Call it a swoon. But try not to call it the end of the Internet stock boom, say market watchers after Internet stocks slid even further into their month-old slump last week.

INDUSTRY ALMANAC

The Dow Jones Internet Index continued its downward trend, including a 7.96% fall Monday, which put the stocks down 25% for the past month.

Companies like Amazon.com Inc. (Nasdaq:AMZN), America Online Inc. (NYSE:AOL) and eBay Inc. (Nasdaq: EBAY), once Internet darlings, are off 47%, 32% and 22% respectively from their 52-week highs.

But Wednesday, the Internet Index gained 5.61%, with AOL gaining 5 5/16 points, Amazon up 9 3/8 and eBay recovering 10 3/8. Some analysts have thrown up their hands trying to make sense of Internet stock fluctuations and have declined interviews, saying only that "there's no rhyme or reason to it."

But others say as long as traders perceive Internet stocks as "new era" stocks that will revolutionize the way we do business, the market will rebound.

"Internet stocks are, by anybody's definition, *Field of Dreams* stocks," says Michael Geran, an analyst at the Pershing division of Donaldson, Lufkin & Jenrette Securities Corp. in Jersey City, N.J. "They overreact on the upside and the downside because they're essentially viewed as trading vehicles. We've gone through these surges three or four times in the last couple of years. Right now, we're in the middle of one of them."

Wheo traders have a positive outlook toward growth, stocks and interest rates, Internet stocks fly, Geran says. But wheo Federal Reserve Chairman Alan Greenspan indicated last week that interest rates could rise later this year, the stocks swooned.

Talk on Wall Street is that companies that have ill-defined business plans aren't going to make the splash they're expecting. "Just dot-com is not going to carry it anymore," Geran says. ■

COMPANY	MARCH-MAY HIGH	[illegible]
Amazon.com	210 5/8 (April 23)	-45%
America Online	167 1/2 (April 6)	-31%
Ameritrade	173 1/4 (April 13)	-50%
eBay	209 1/4 (April 27)	-19%
ETrade**	59 29/32 (April 27)	-30%
Excite	171 15/16 (March 12)	-27%
Infoseek	88 (March 22)	-53%
Yahoo	219 1/8 (April 5)	-39%

TICKER	52-WEEK HIGH	52-WEEK LOW	NAME	MAY 28 3 PM	WK NET CHANGE	WK PCT CHANGE
SOFTWARE OFF -1.2%						
ADBE	81.38	25.62	Adobe Systems Inc.	73.50	3.00	4.0
AZPN	56.87	8.12	Aspen Technology Inc	10.50	0.00	0.0
ADSK	88.43	21.65	Autodesk Inc	28.31	1.31	4.4
BAND	45.87	11.00	Best Technology	16.75	4.94	3.3
BOBJ	42.50	6.12	Business Objects S.A.	29.00	1.75	8.7
CDN	30.50	10.03	Cadence Design Systems	12.50	0.25	1.9
CBTSY	63.87	4.00	CBT Group Plc	15.75	1.25	1.6
CHKPF	50.00	16.87	Checkpoint Software	44.50	4.87	1.4
CTXS	53.75	23.12	Citrix Systems Inc.	46.75	1.50	3.1
COGNF	79.12	14.75	Cognos Inc	24.10	1.00	4.1
CA	61.03	26.06	Computer Associates	41.10	1.00	4.1
CPWR	40.00	16.37	Compuware Corp	31.13	3.10	10.7
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EFII	57.00	17.50	Electronics For Imaging	50.87	1.00	4.1
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MACR	63.25	15.31	Macromedia Inc. (H)	39.81	7.00	15.0
MANU	31.50	5.75	Manugistics Group Inc	9.03	1.44	17.0
MENT	15.00	5.43	Mentor Graphics	12.75	0.63	8.7
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NETA	67.00	10.00	Network Associates	0.10	0.00	2.2
NETG	63.61	80.37	Network General	54.44	3.44	5.0
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ORCL	41.10	17.25	Oracle Corp	24.63	1.25	4.0
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BLS	50.00	31.63	Bell South	47.13	0.44	4.0
CSN	23.87	8.00	Cincinnati Bell Inc. (H)	21.56	0.44	1.9
CMCSA	47.56	18.64	Comcast	80.13	1.00	2.0
CQ	39.87	21.75	Comsat Corp	33.00	0.00	0.7
COX	44.44	20.75	Cox Communications Inc	48.00	3.03	7.1
GSTRF	87.37	8.31	Globalstar Telecom Ltd	12.00	2.10	11.0
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SBC	59.63	36.00	SBC Communications	50.13	0.50	1.0
FON	114.62	54.63	Sprint Corp	101.75	4.75	4.4
TDS	69.37	39.87	Telephone and Data Systems	67.38	1.75	1.8
USW	68.00	46.87	US West	53.38	2.39	0.0
VIA	94.75	38.63	Viacom	38.00	2.38	0.7
WCII	56.12	15.75	Winstar Communications Inc.	50.04	1.00	3.0
WCOM	94.87	40.00	MCI WorldCom Inc.	80.09	0.00	0.4
SERVICES OFF -1.9%						
ACXM	31.25	14.50	Acxiom Corp	27.81	0.10	0.1
ACS	51.75	22.37	Affiliated Computer Servs	43.75	2.75	0.7
AMSY	40.25	19.75	American Mgt. Systems	28.00	0.12	0.4
AUD	47.87	30.61	Automatic Data Processing	41.00	3.31	7.8
BSYS	60.37	30.37	Bisys Group Inc.	50.06	6.00	1.0
CATP	60.37	10.67	Cambridge Technology Ptnrs	17.00	2.50	12.8
CEN	60.50	24.00	Ceridian	32.63	1.10	0.0
CBR	40.87	12.37	Ciber Inc	21.63	0.00	0.0
CBO	30.67	10.75	Comdisco	26.44	0.87	4.2
CHRZ	44.75	8.25	Computer Horizons Corp	10.00	1.70	7.1
CSC	70.61	10.75	Computer Sciences	64.06	0.50	0.8
DST	79.50	34.00	DST Systems Inc.	53.94	1.00	2.0
EDS	60.75	80.83	Electronic Data Systems (H)	56.00	2.63	4.6
FDC	46.25	19.68	First Data Group	40.13	0.31	0.7
FISV	60.75	24.87	Fiserv	30.75	1.00	3.8
IT	36.12	17.10	Gartner Group	23.94	0.63	7.8
KEA	80.64	17.25	Keane	20.00	0.00	0.7
NDC	80.25	20.10	National Data	87.44	0.05	1.6
PAYX	36.75	22.12	Paychex Inc. (H)	28.00	1.13	3.6
RWOR	23.00	4.88	Renaissance Worldwide	7.27	0.27	3.1
REY	25.50	12.87	Reynolds & Reynolds	22.75	2.00	0.3
SFE	170.00	19.10	Safeguard Scientifics	73.44	11.00	13.5
SAPE	87.87	28.75	Sapient Corp	64.13	7.88	10.8
SMS	80.50	40.00	Shared Medical Systems	60.00	1.00	2.0
SDS	41.83	21.00	Sungard Data Systems	30.63	0.50	0.0
SYNT	60.00	8.00	Syntel Inc.	73.00	0.00	0.0
TECD	63.19	14.50	Tech Data	30.50	2.10	5.7
TSS	26.70	14.43	Total System Services Inc.	18.87	0.00	0.0
TSAI	51.00	26.00	Transaction Sys. Architects	32.06	1.00	5.0
NETWORKS OFF -3.1%						
COMS	51.17	80.00	3Com Corp	27.30	1.00	0.0
ADCT	87.70	15.75	ADC Telecommunications Inc	44.94	1.00	2.1
ANTC	34.10	11.00	Antec	26.50	1.00	3.3
ASND	102.50	32.62	Ascend Communications Inc	91.00	2.31	0.0
BNYN	18.37	2.12	Banyan Systems Inc	5.13	1.10	0.0
CS	19.00	6.00	Cabletron Systems (H)	14.75	0.44	3.1
CMTN	19.75	0.75	Coh Net Enterprises	6.75	0.39	5.3
CSCO	122.31	41.10	Cisco Systems Inc	109.30	5.00	4.4
ECILF	45.00	19.75	ECI Telecom	34.84	2.10	0.0
FORE	38.04	8.25	Fore Systems Inc	34.31	0.44	1.3
HRS	80.00	29.37	Harris Corp	31.63	2.40	6.5
GMH	63.87	30.37	Hughes Electronics GM	34.50	3.44	0.0
ERICY	87.00	18.00	LM Ericsson	29.50	0.50	3.0
LU	67.00	28.00	Lucent Technologies	58.13	1.25	2.2
MADGF	8.37	1.75	Madge Networks	3.13	0.13	3.8
NCDI	6.10	4.31	Network Computing Dev.	4.87	0.94	0.3
NWK	17.29	3.37	Network Equipment Tech	10.13	1.10	12.5
NN	80.67	15.00	Newbridge Networks	27.00	2.00	7.0
NOK	60.00	76.00	Nokia Corp	71.44	0.94	0.0
[illegible]	[illegible]	[illegible]	[illegible]	14.04	0.30	[illegible]
PAIR	[illegible]	[illegible]	[illegible]	7.41	0.10	[illegible]
PCTL	[illegible]	[illegible]	PictureTel	8.63	0.52	[illegible]
SFA	29.75	11.75	Scientific Atlanta	35.50	1.75	1.1
TLAB	63.83	15.08	Tellabs Inc	51.75	2.64	[illegible]
[illegible]	80.00	60.00	[illegible]	63.30	0.34	0.4
[illegible]	6.02	2.10	[illegible]	3.25	0.37	8.6
WSTL	71.02	[illegible]	Westell Technologies	4.50	[illegible]	8.5
SEMICONDUCTORS, CHIPS & EQUIPMENT OFF -4.0%						
ADPT	31.87	7.87	Adaptec Inc	[illegible]	1.00	[illegible]
AMD	33.00	8.31	Advanced Micro Devices	10.00	2.10	10.0
ALTR	41.25	19.12	Altera	40.00	1.56	4.3
ADI	42.01	12.00	Analog Devices	30.30	4.87	[illegible]
AMAT	71.64	21.50	Applied Materials	54.10	5.00	8.5
ASMLF	50.37	12.93	ASM Lithography Hld NV	60.50	1.06	1.1
HRS	95.30	27.81	Harris Corp	17.63	0.3	0
INTC	71.87	32.87	Intel Corp	53.07	4.00	7.0
KLAC	80.50	20.75	KLA Tencor	44.10	5.25	10.6
LLTC	64.12	18.50	Linear Technology	5.41	0.75	0.0
LSI	80.92	10.50	LSI Logic	10.81	1.00	1.6
MXIM	69.12	27.38	Maxim Integrated Products	57.63	0.56	0.9
MU	80.56	80.87	Micron Technology	10.07	0.75	[illegible]
MOT	80.87	16.17	Motorola	80.03	1.50	0.1
NSM	27.75	7.83	National Semiconductor	10.00	1.10	5.9
STM	120.00	30.87	SGS Thomson Microelectronics	10.87	2.25	[illegible]
SLR	57.87	17.00	Solectron Corp	54.00	0.75	0
TER	80.00	15.00	Teradyne	57.44	1.37	1.4
TXN	111.81	45.37	Texas Instruments	100.87	4.00	2.4
UNPH	100.00	31.25	Uniphase	120.75	3.25	4
VTSS	60.00	17.12	Vitesse Semiconductor Corp	50.13	4.10	8.8
XLNX	50.37	14.87	Xilinx	40.75	3.07	8.5
COMPUTER SYSTEMS UP 0.4%						
AAPL	50.00	25.02	Apple Computer Inc	44.00	1.00	2.1
ASPX	12.00	1.87	Auspex Systems	10.50	0.75	0.8
CPQ	51.70	22.70	Compaq	23.00	1.00	0.1
DGN	21.10	7.00	Data General	12.01	0.50	4.0
DELL	50.00	18.31	Dell Computer Corp	34.30	2.87	7.6
GTW	44.50	18.12	Gateway 2000 Inc.	60.00	4.00	0.0
HWP	97.56	47.06	Hewlett Packard Co	94.75	1.00	1.1
HIT	10.83	87.16	Hitachi Ltd	73.00	5.00	1.4
IBM	122.00	53.00	IBM	115.50	0.00	0.4
MUEI	14.75	6.37	Micron Electronics	10.00	0.12	[illegible]
MOT	86.67	10.37	Motorola	84.03	3.50	4.1
NTAP	38.17	17.50	Network Appliance Corp	37.00	4.00	10
NCR	50.75	13.50	NCR	38.75	2.00	6.4
NIPNY	80.50	31.00	NEC	58.00	0.30	0.7
PRCM	12.75	3.43	Procom Tech Inc.	4.31	0.04	0.2
SQNT	17.10	9.00	Sequent Computer Systems	13.10	0.30	2.8
SGI	30.00	7.37	Silicon Graphics	12.37	0.00	0.7
SNE	104.31	80.75	Sony	80.75	2.00	2.1
SUNW	72.50	10.10	Sun Microsystems	80.75	0.00	1.1
TXMC	8.64	2.00	Texas Micro (H)	6.31	1.50	32.9
TRCD	4.87	0.31	Tricord Systems	7.25	0.10	5.4
UIS	80.10	17.00	Unisys	17.00	3.00	0.0
INTERNET OFF -7.2%						
AMZN	221.75	13.37	Amazon.com	80.63	8.00	9.1
AOL	175.00	17.25	America Online	117.50	8.75	7.0
ATHM	150.00	60.50	@Home Corp	105.13	5.87	3.6
CHKF	80.10	6.75	Checkfree	80.50	2.30	4.7
CYCH	24.87	4.00	Cybercash Inc.	13.75	2.20	14.5
EBAY	18.87	3.87	eBay Corp	11.00	3.81	0.0
EGRP	72.75	7.50	E*Trade Group Inc.	44.00	9.25	17.2
XCIT	107.67	10.00	Excite Inc	100.25	3.00	0.7
INSP	80.00	10.87	Infoseek	80.00	3.75	7.0
LCOS	145.37	20.00	Lycos Inc	60.00	0.00	0.4
OMKT	70.00	4.25	Open Market Inc	12.30	0.75	8.1
OTEX	87.00	10.00	Open Text Corp	10.75	1.13	3.0
PSIX	73.75	8.37	PSINet Inc	43.30	8.00	15.6
SDTI	30.62	5.63	Security Dynamics	10.75	1.31	0.0
SPYG	32.75	6.64	Spyglass Inc	10.00	0.06	0.3
YHOO	244.00	24.37	Yahoo Inc	100.00	10.56	7.0
STORAGE & PERIPHERALS OFF -1.0%						
ADPT	31.01	7.87	Adaptec Inc. (H)	80.00	0.00	0.3
APCC	50.50	20.30	American Power Conversion	87.00	4.50	12.9
CAMP	25.00	17.00	Cognex Inc	25.00	0.00	2.0
DBD	80.87	18.87	Diebold Inc	27.81	1.10	4.1
EK	80.63	80.87	Eastman Kodak Co	87.00	6.50	0.1
EMC	120.00	80.10	EMC	100.13	3.00	0.0
IOM	10.87	2.63	Iomega	8.00	0.44	0.0
LXK	142.00	50.75	Lexmark International (H)	130.00	4.13	0.1
QNTM	26.63	10.01	Quantum	10.50	0.00	0.3
SEG	44.75	18.10	Seagate Technology	80.75	0.88	0.2
STK	51.10	17.25	Storage Technology	18.81	0.00	3.8
TEK	30.00	13.00	Tektronix	25.00	1.00	0.2
XRX	63.63	30.00	Xerox	50.10	0.50	0.0

KEY: (H) = New annual high reached in period
(L) = New annual low reached in period

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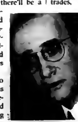
Trading Hours

Nasdaq currently operates from 9:30 a.m. to 4 p.m., though NASD officials say they haven't set a timetable for introducing evening trading. NASD Chairman Frank Zarb said he would prefer to coordinate evening trading with the NYSE in the best interests of investors.

Also last week, NYSE Chairman Richard Grasso said the Big Board could begin evening trading sessions as early as July. They will vote on the proposal this week.

Competitors are forcing the NYSE and Nasdaq to make a decision, analysts said. Online trading services such as Eclipse Trading and Wit Capital in New York plan to introduce electronic after-hours trading services for individual investors beginning this summer. The NYSE hasn't decided whether after-hours trading would be set up electronically, though such a strategy would be likely for the all-electronic Nasdaq.

"Once the genie is let out of the bottle, then there'll be a market" for 24-hour trading, said Larry Tabb, an analyst at TowerGroup, a Needham, Mass.-based financial services consultant.



NYSE'S RICHARD GRASSO: Considering whether to add extended trading

Tabb pointed to how Nasdaq has already lost between 20% and 35% of its trading volume to so-called electronic communication networks such as Instinet and Archipelago. These networks are private firms that match stock orders among buyers and sellers.

Evening trading sessions would give big brokers like Merrill Lynch & Co. less time to process their trades with overnight batch runs in time for the next day's trading session. Brokers are "increasingly moving away from" batch processing models to crunch their trades, said Toronto-based Mackenzie Financial Corp. CIO Stephen Pozgaj. But many big brokerages continue to rely on big iron to get their trades executed, Tabb said.

To process those trades faster, brokerages may have to either beef up their own mainframe processing capacity or pay a service bureau like Automatic Data Processing Inc. more for expanded capacity, CIOs said.

After-hours trading will also give brokerages a smaller window of opportunity to take down trading and other ancillary systems for necessary maintenance and upgrade work, said Helen J. O'Connor, director of IT management services at First Albany Corp., an investment bank in Albany, N.Y.

Also at issue: To trade stocks at night, brokerages "will need a skeleton crew" to oversee compliance, credit and systems and to monitor trades, said David Pe, an information systems director at Deutsche Bank Securities in New York.

Staffing Issue

Executives at Nasdaq, the NYSE and several brokerages declined to comment for this story, saying it's too early to speculate about proposals that have yet to be fully approved. But several CIOs acknowledged off the record that even though they don't expect significant trading volumes after hours, they still face a big job in persuading some of their daytime IT staffers to work at night.

Getting people to work the 4-to-midnight shift "is always a problem," Pe said. Although big brokers like Merrill Lynch and Salomon Smith Barney could probably hand off some of their trade processing to offices in Tokyo and London, stateside brokerages still face "cultural impact" issues in getting IT professionals to change their work habits and be willing to work into the night, said Yuval Lirov, a senior vice president at Lehman Brothers Inc. in New York.

Financial services CIOs might do well to study after-hours IT support models created by successful companies such as MCI WorldCom Inc. and Compaq Computer Corp., said Robert A. Zawacki, professor emeritus at the University of Colorado in Colorado Springs. Compaq, for example, provides around-the-clock customer service and offers a "delta" in pay for IT staffers who are willing to work a graveyard shift, Zawacki said. ▶

Continued from page 1

Online Earnings

Cleveland, an Internet strategist at Lante Corp., an e-commerce services company in Chicago.

Fueling that drive is the post-Christmas realization of just how big online sales are. That, plus first-quarter results, points to a continued strong showing on the Web, putting businesses under more and more pressure to go online.

For example, at The Sharper Image, store sales for 1998 were up 9% compared with a year earlier, catalog sales up 27% and online sales up 492%, so it's not as if one channel is cannibalizing the other. They're all growing — but it's the online channel that is growing the most.

As a result, rather than anticipated dollar revenue, "it's OK now to talk about soft returns," like customer goodwill, building brand recognition and loyalty, and pre-empting competitors with new Web-based functionality, Cleveland said.

At Xerox Corp., for example, an Internet presence is considered "a fundamental business strategy, an imperative," said CIO Gary Banks.

"It's a boardroom decision that a customer ought to be able to do business however they want with us, and that includes face-to-face, over the telephone or through the Internet," Banks said. "It's almost like an 800 number. It's expected."

Consolidated Freightways in Menlo Park, Calif., never even tried to attach a dollar value to its new Web-based customer service system, which lets salespeople answer customers' questions in real time via new text-based chat technology.

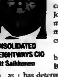
Consolidated didn't calculate the ROI for its self-service, Web-based freight-tracking system either. Nor did it make any hard-and-fast projections about new customers or sales that the Web-based systems might generate.

Conversely, as recently as a year ago, on big enterprise resource planning projects, for example, company executives were analyzing the cost per transaction over a single integrated system rather than multiple, stovepipe systems for order processing, accounting, inventory and so on.

"There may be associated reductions in expense due to self-service activity, but it typically isn't done for ROI," said Consolidated CIO Matt Saikkonen. Instead, he said, both of the company's Web-based customer-service initiatives "were justified as a cost of doing business and facilitating customer satisfaction."

New research from Giga Information Group Inc. in Cambridge, Mass., indicates that Consolidated may indeed be on the right track.

"While e-commerce sales are undoubtedly important, for most companies, they just scratch the surface in terms of total economic impact" of Internet initiatives, said Giga analyst Andrew Bartels.



CONSOLIDATED FREIGHTWAYS CIO Matt Saikkonen

Other types of Internet interaction, such as Web-based marketing, customer service and procurement, will play a role in generating even greater profits for companies, Bartels said.

For example, customer research on the Internet is a factor in 25% to 30% of all new car sales in the U.S., he noted.

XEROX CORP. CIO Gary Banks

John Jordan, director of e-commerce research at Ernst & Young LLP's Center for Business Innovation in Cambridge, Mass., is an extremely vocal advocate for new ROI metrics for Internet projects.

E-commerce is customer-driven, so traditional ROI measures for IT — such as what it costs to process a transaction — simply can't and don't work, Jordan said. Much more appropriate are metrics that focus on customers.

San Francisco-based Wells Fargo Bank, for instance, has determined that its online channel generates more new customers than branches. "We have statistics that say 17% of home equity customers in branches were new to the bank, but when we measured the same thing online, we found 28% were new bank customers," a spokesperson said.

Another possible reason executives have been so keen to plunge ahead with e-commerce projects is the rosy effect they inevitably seem to have on their companies' stock prices, which helps determine many CEOs' salaries.

For example, highly-wired Charles Schwab, which was first out of the gate with online investing capabilities, boasts a higher market valuation than Merrill Lynch & Co., even though Merrill Lynch has $1 billion more in revenue than Schwab.

"At that point, who cares whether you've paid for your servers," said Ernst & Young's Jordan. "It's far more beneficial for executives to "use market metrics to validate the wisdom of [e-commerce] decisions." ▶

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FRANK HAYES/FRANKLY SPEAKING

Set your sites big

LAST MONDAY, the Mormon Church officially launched its FamilySearch.org genealogy Web site. It promptly crashed, swamped by a tidal wave of visitors — 500 new arrivals *every second*, more than three times the anticipated load. The same thing happens at online brokers like Charles Schwab and ETrade whenever Wall Street has a wild day. It happens when Victoria's Secret holds an online fashion show. Why can't IT shops manage to keep popular Web sites going when they get *really* popular?

Maybe we're just too efficient. Maybe, along with all the techies, we need a salesman — or at least someone who *thinks* like a salesman.

Sure, there are technical problems we still have to solve, problems that smarter, better technology might fix. And we know some sites were cobbled together with chewing gum, bailing wire and Perl, and then just grew out of control.

But other sites, such as the online brokers', are constantly beefing up their technology to meet ever-larger user loads.

And some, like FamilySearch.org, were designed that way from the beginning. The Mormon Church hired IBM's e-commerce experts to make it work, and Big Blue had things running smoothly for a six-week trial period, with 5 million to 7 million hits per day. Then publicity about the "official" opening of the site hit the media, and the site was suddenly crushed by 10 times as many visitors.

That sort of shortfall can't be solved by tweaking the technology. It happened because someone grossly miscalculated how fast the site would grow.

And how is it that we so spectacularly underestimate what our Web sites will have to handle? We do it by thinking like IT people.

Face it, we *like* keeping volume down. We're happiest when we discourage users from wasting bandwidth, generating unnecessary reports or calling the help desk. Our mind-set is cost containment and efficiency, and our mantra is "no" whenever users ask for more of anything: data, bandwidth or programming time.

That's fine for inside-the-company users. (Actually it's *not* fine, but we've gotten away with it for decades.)

But on the Web, we're dealing with customers — real, money-paying customers. For the first time in history, we actually sell products instead of just providing services internally.

Which is why we need to think like sales guys. Sure, they can be a bunch of glad-handing, cheerleading idiots sometimes. But they've got it right when it comes to e-commerce.

Why can't IT keep Web sites going when they get really popular?

Sales guys don't say "no." Their mantra is "more." Salespeople don't cringe when somebody wants to increase sales volume by 10% or 200%. Hey, if a customer wants to double the order, nothing could make sales guys happier — except maybe tripling it. For sales guys, the more the merrier.

That's what we need for Web e-commerce projects. We've got to dump the mind-set that says "no." We've got to think big, no ceiling, sky's-the-limit.

We've got to build sites that start out with too much capacity and are designed to expand fast. When we build the plumbing or manage the back end, we've got to assume the site will be huge beyond our wildest expectations.

Wasteful? Inefficient? Maybe. But right now, we waste time and effort with endless cycles of build-and-crash and rebuild-and-crash and redesign-and-crash. We build Web sites that can't handle the load — driving customers into the arms of our competitors, just a click away.

And that's *really* inefficient. ▸

Hayes, Computerworld's staff columnist, has covered IT for 20 years. His e-mail address is frank_hayes@computerworld.com.

SHARK TANK

SOUNDS FAMILIAR, PART I: Barry, a loyal Tankster and veteran programmer, passes along this recent chat with a colleague who was switching date representations to the Unix standard as part of a Y2K fix. Barry: "How far out will this format take us?" Colleague: "2036, give or take." Barry: "So in 2036, our program will drop dead?" Colleague: "That's silly; no one will be running this program in 2036."

SOUNDS FAMILIAR, PART II: "Sorry I couldn't call back sooner, but we're implementing an SAP application." That's Walter Miller, IT and operations manager at Business Resource Group, an office design company in San Jose. For the record, Miller was laughing.

BE A HERO and pass this little tidbit along to the bean-counters. Sharky hears that after the Fourth of July, Automatic Data Processing stops taking on payroll outsourcing for Fortune 1,000 companies - in time for 01/01/2000, anyway. If you want to avoid payroll's inevitable Y2K-related brushfires, better hustle.

CAREER OPPORTUNITIES: Bill Gates has an IT staff running his $60 million home. No surprise. But get this: According to a Microsoft employee (overheard by a pilot fish), those IT folks scurry around in a network of passageways behind the walls. "Cables, servers, the people – everything's back there, and you'd never know it," the Microsoft said. Waistline considerations would preclude such tight-quarters work for the Shark.

A ROLL BY ANY OTHER NAME: Know what IBM calls rolls of computer printer paper these days? "Total output solutions." Well, la-di-dah. Big Blue even has a "state-of-the-art" research lab in Colorado for developing paper products. Here in the Tank, we need total output solutions only when we drink too much coffee.

THIS WEEK'S Shameless Y2K Tie-In Award featured a close battle. Kia Motors just launched an ad campaign claiming that Y2K stands for "Yes 2 Kia." Strong effort, to be sure - but Kia was edged out by Iomega, which *actually commissioned a national survey* that found "Y2K ranks just ahead of buying a bathing suit in terms of the stress it causes women." The Shark Tank will mail Iomega's creative team its first-place prizes. Thongs for the women. Speedos for the gents.

Sharky admits he is a shameless snoop himself. Rude vendor rep? Bizarre boardroom decisions? IT intrigue? Fire off an anonymous e-mail to **sharky@computerworld.com**.

The 5th Wave

"So far he's called up a cobra, 2 pythons and a bunch of skunks, but still not the file we're looking for."

E-mail Rick Tennant at the5thwave@tbc.net

ON THE WEB, AS R

On the Web, speed rules. If you doubt it, see how long a customer will wait before clicking to a competitor's site. IBM RS/6000® UNIX® servers, with the AIX® operating system, are behind some of the fastest and most powerful Web sites anywhere. In fact, our RS/6000 S70 Advanced server operates at twice (twice!) the level of Sun's highest published SPECweb96 benchmark.* Learn more at www.ibm.com/RS6000/unix

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